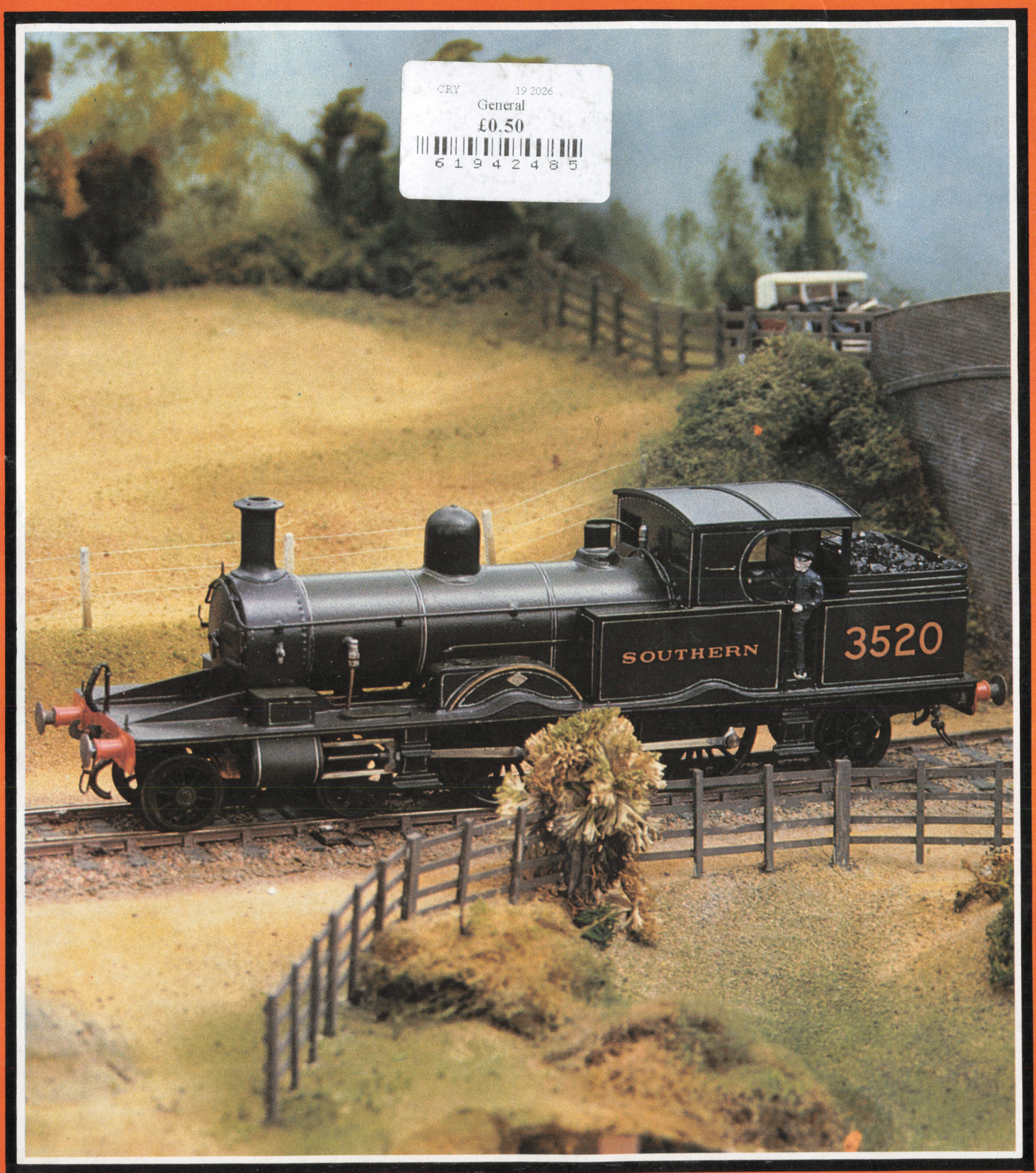
MODEL TRAINS

In this issue:

Lyme Regis in 0 gauge
German push-pull trains
'Schools' class detailed
LNER 'Pom-pom' conversion
Bad Harzburg German layout, plus tests, reviews and much more!

October 1981 55p



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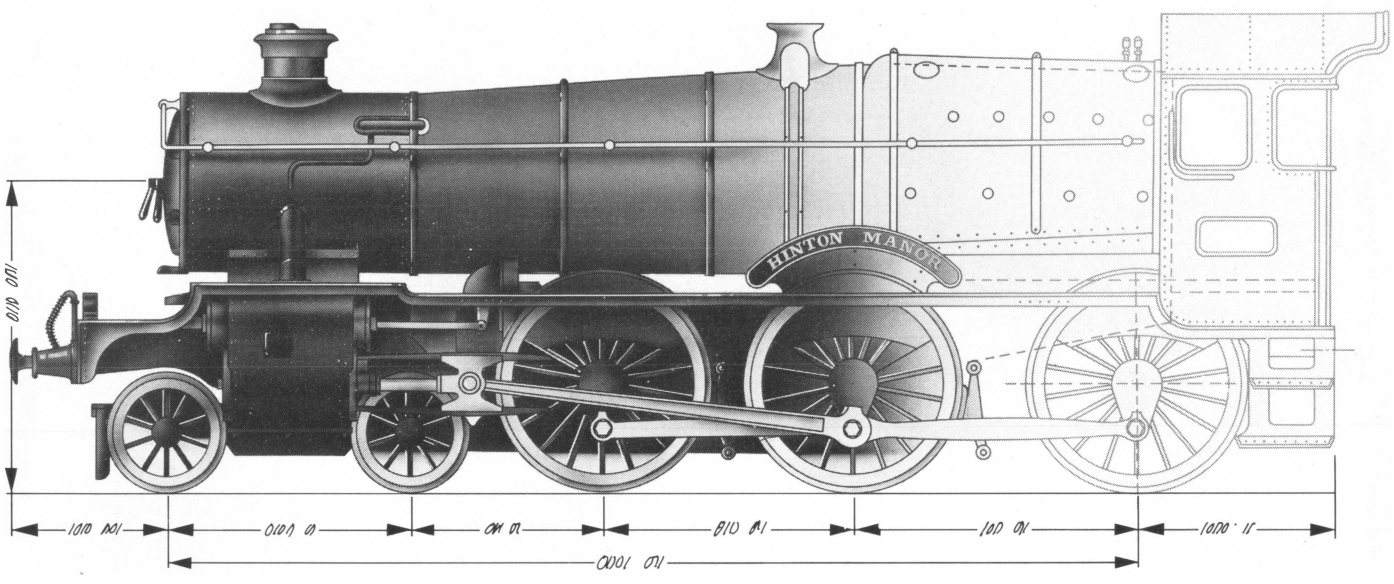

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MODEL TRAINS

OCTOBER 1981

AIRFIX

VOLUME 2 NUMBER 10

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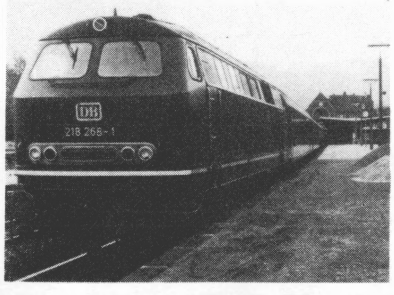

Classic Class 218 of Deutsche Bandesbahn waits to depart with its train from Bad Harzburg. This small terminal station forms this month's 'Basis for a Layout' and we have two other articles, also, to assist German railway modellers. See page 520 onwards (S. Rabone).

On the cover
If you were ever familiar with the old Lyme Regis branch you will recognise this scene as Adams 'Radial' 4-4-2T No 3520 runs round its train on the 0 gauge layout of Tony Nelson. The model is a first attempt at scratch-building by Tony Nelson who took the photo and writes about the layout on page 508.

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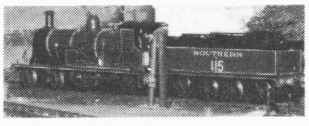

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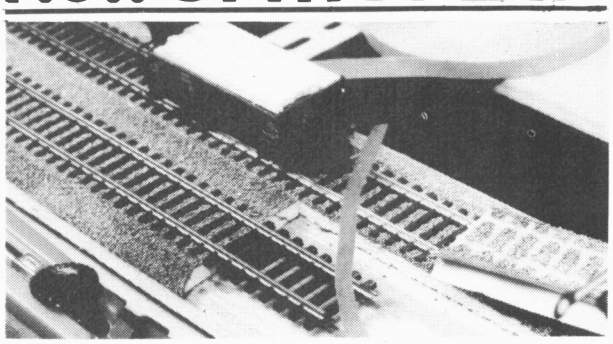

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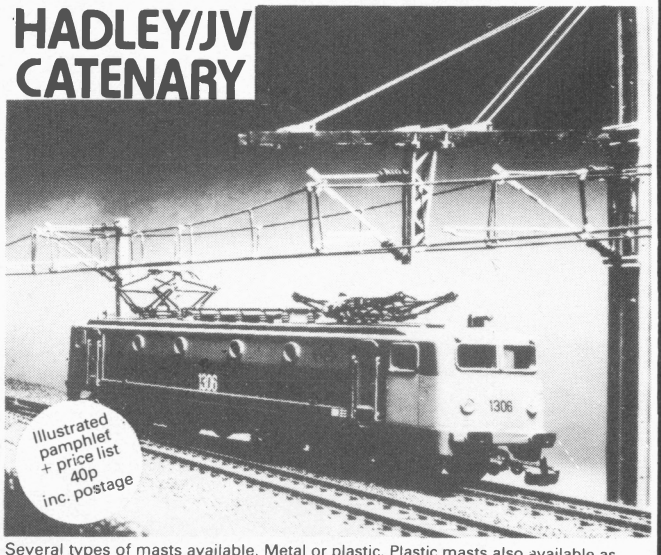

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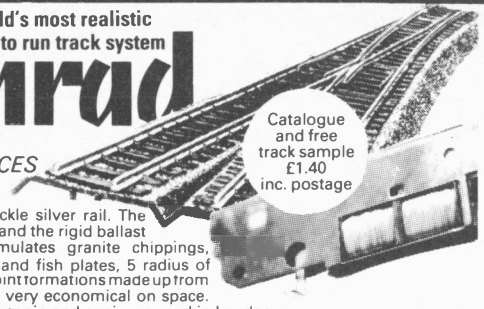

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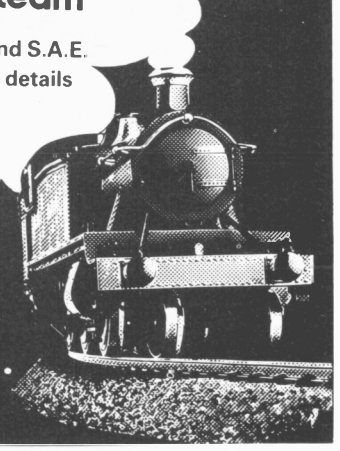

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Editor's desk

The Editor is off on his holidays this month, clutching bucket and spade under one arm and the latest Mainline model under the other, so I am in the 'hot seat' this time preparing this issue for press.

Having come hot foot from visiting a museum, it seems an appropriate time to 'fly the flag' for preservation in this country. When was the last time that you visited an exhibition or a museum? We all know that they are there, but getting to them is a different matter.

A museum of transport, whether it be concerned primarily with trains, planes, bikes whatever, is bound to pose certain problems for its curators, simply because of the sheer size and nature of the exhibits. Machines that are designed to move, look unnaturally still when tucked behind a glass case or barrier. Display is therefore of the utmost importance and over the last ten years, there has been a radical move within the museum service to change its style of presentation. One of the museums which I recently visited is a good example of more forward thinking. This is the North Western Museum of Science and Industry, 97 Grosvenor St, Manchester which is situated in a quiet corner of the city. An old Victorian building, complete with stained glass windows and wooden panelling, it is not an outwardly attractive building – until, that is, you step inside. Filled to almost overflowing capacity, the museum offers room after room, crammed with the relics of an industrial age. And the machines work! Press the right buttons, pull the correct knobs and pistons start moving, wheels start turning and you can actually begin to grasp how and why the machines evolved.

It is interesting to note that certain other countries are already far ahead of us in the display field. As yet, we have nothing to compare with the Pompidou Centre's visual bag of tricks in Paris – a city incidentally, which already has installed machines in push button form, to illustrate various scientific principles at their stations. A gimmick, perhaps, but if they are going to attract people and arouse their curiosity then it can't be a bad thing. The machines, by the way, in the Manchester museum have been cunningly designed to stop children from simply pressing and then wandering away – they have to stay there, finger on the button, to force the machine to continue.

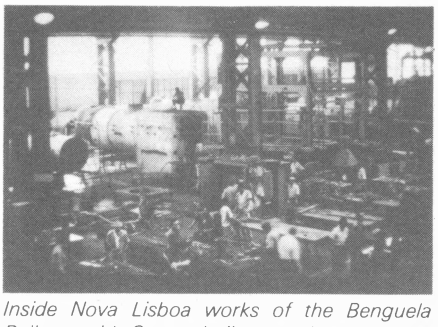
From the modeller's point of view museums are invaluable as a source of reference for detail, colour, markings, etc. For example you can see actual locomotives and rolling stock, among many other items, in a growing number of museums. Don't forget this if ever you get stuck for modelling ideas or information.

The other role of the museums, apart from preservation and display, is obviously one of imparting information. Should the public be spoon-fed with masses of text? Is too much detail off-putting? How much social history should be included to explain the effects of these machines on ordinary peoples lives? The questions are endless and the museums are constantly having to compromise in order to achieve some sort of balance. The use of video and film has been of a tremendous help in putting across information by crossing the gap of antipathy that some people have for the written word. But all this of course means money, which in turn directly, or indirectly, means you.

Government bodies all too often rely upon statistics, such as the number of people passing through the gates, when deciding on who gets how much in the financial stakes. Again, how much do you, as a ratepayer want to see spent on preserving Britain's heritage? Private collections such as the magnificent Shuttleworth Collections also rely almost entirely on entrance fees and donations, to keep their buildings open.

So, the next time you fancy a day out (particularly if it's raining), why not go along and support a museum, local or national. Who knows, by looking at something from the past you may be inspired to model something for the future. It's been done before!

Christine Lake



Inside Nova Lisboa works of the Benguela Railway with Garratt boilers on show.

TEST TRACK

In this feature we take a closer look at the selected items which are tested and assessed by the editorial staff or contributors

Lima: GWR Railcar, 1:76 scale/00 gauge, UK £17.50

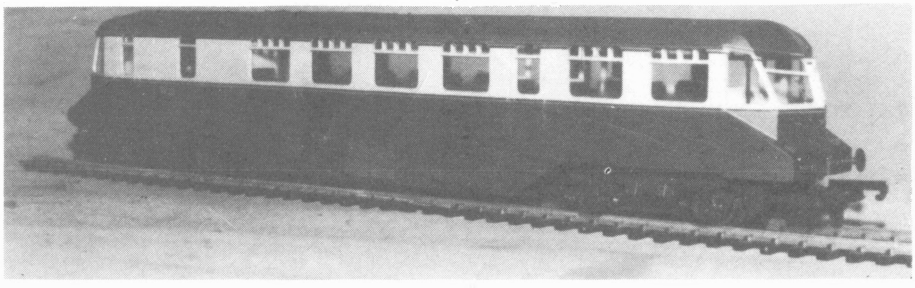
Keenly awaited by GWR fans since its announcement in 1980, this proves to be a top class model well worth the wait. It is one of those models virtually 100% perfect as it comes – truly ready to run. You'll have to look hard to fault it and only minor comments are called for. In the BR crimson lake and crimson cream livery, the model lacks the W suffix after the number (easily found on PC, Kemco, or Kingprint transfer sheets), it lacks two lamp irons above each buffer beam (hardly noticeable but easily added), and it requires brake and heat pipes to be added in the usual way. These points apart, it is picture perfect, even to the correct pattern screen wipers and correctly arranged cab interiors. All the seating is moulded in brown, making the full interior look most realistic. The bogies are works of art in themselves, with full and intricate detail and with blackened wheels.

Mechanically the model is identical to the same firm's DMU which we praised for its slow smooth running properties. This model performs just as nicely. Just add driver and passenger figures and you have the perfect unit for a GWR branch or secondary line – for example they were a mainstay of the Severn Valley line (see August 1981 issue) in its final years of BR ownership. This is certainly a highly commended model if it falls within your area of interest.

Indeed, being so beautifully compact – a complete train in one unit – makes this model just the thing for a small layout. These railcars could work in pairs, but they could also haul an ordinary coach as a trailer – such as a B unit coach. They could also trail fitted freight vehicles and commonly did so on lightly trafficked branches.

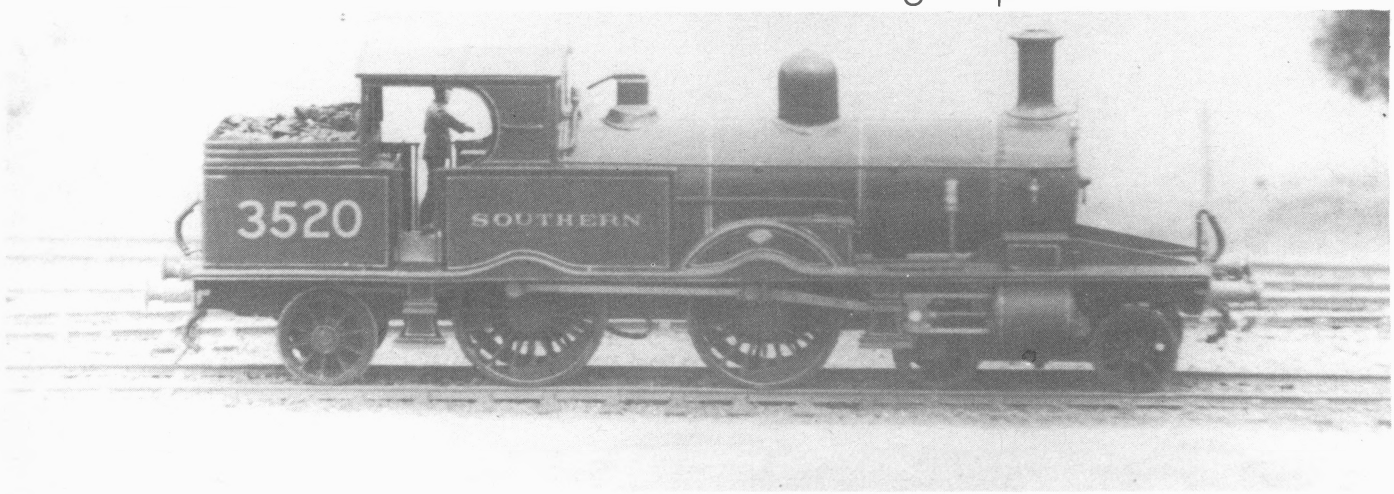
The Lima model is marked as car 22, from the angularly-styled 1938 order (cars 19-33). It is also promised in GWR and BR green liveries, presumably with different numbers. Several cars in the crimson lake and cream livery were still running so painted in 1962, though DMU green was by then in official use on these cars.

A detailed article and scale drawing covering this batch of cars appeared in our March 1980 issue. Some cars had the end domes in white while in crimson lake and cream finish, and No 24 was one such. One blemish on our sample was a small smudge on the painted side, seemingly caused by packing before the paint was fully dry. We corrected it easily enough with a touch of Humbrol paint but it may be worth a glance – the foam packing obviously removed the paint in this case.



LYME REGIS

Tony Nelson describes his layout after forty years of modelling experience



The Model Adams 4-4-2T 'Radial' carrying the later Southern number 3520. It was one of the three such locomotives that worked the Lyme Regis Branch for many years.

My interest in railways, and models of them, was certainly well kindled by the age of four, although during those early war years my models were no more than a card 'cut-out', or even a number of sticks of firewood, which not only represented the locomotive and coaches, but also the level crossing gates (all manually operated!). I like to think that I have made some progress since those early days; I know there is still more progress to be made to achieve anything like perfection, but I hope that this article, like many that I have read in the past, will be of some interest and value in encouraging others.

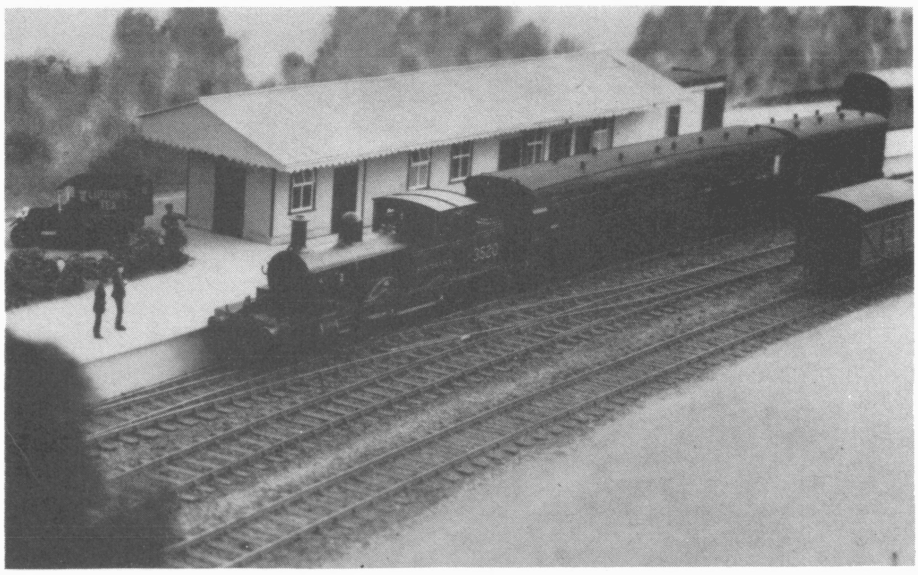
My layout of Lyme Regis then is a culmination of some forty years modelling – on and off – with never a layout yet properly finished. I do however, get a little nearer the goal each time, and perhaps I can follow up this article with another, when my proposed garden layout is completed, including Axminster and a good stretch of the attendant main line. I hope this will be in time for the Gauge O Guild Golden Jubilee this September.

Following the usual Hornby tinplate clockwork set circa 1949, my first introduction to 'scale' modelling arose from a visit to the Model Railway Club Easter Exhibition in 1951. Shortly afterwards I acquired the necessary materials for making up Basset-Lowke track, achieving a small oval with two turnouts, and an old LMC model of a SR G6 tank engine. Living in Kent at the time, I was a confirmed Southern enthusiast, even although my daily diet of trains consisted entirely of Suburban Electrics, with just one L1 a day on the unusual 'Dartford Loop' route to the Kent Coast, and an occasional C class trundling a mixed goods. Over more recent years, I have formed an increasing affection for much of the former LSWR, and it is to my eternal regret that, although I was nearly 30 by the time steam finally disappeared, and the main line from Salisbury westward was emasculated, I had never taken the opportunity of enjoying the first hand experience of 'being there' whilst there was still time. The atmosphere that I now try to re-create, is for the most part cultivated within me by the excellent series of photographic books published by Bradford Barton and others, without whom I would have probably been lost from the cause.

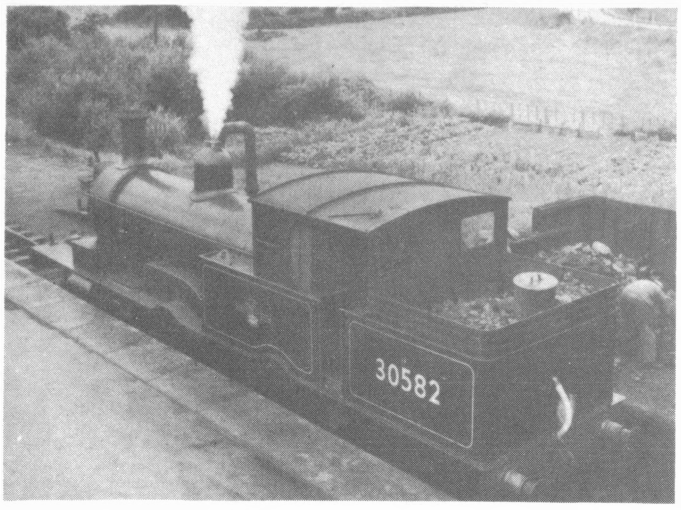
My first 'working' gauge O layout of 1951 was something of an achievement, but I soon realised that 10ft x 6ft on the bedroom floor was a bit limiting, and I sold all that I had made and acquired (for £9!) and turned to 4mm scale. I tried TT in 1957, EM in 1967, 2mm scale in 1974 (that lasted 3 weeks!) and back to EM again, but I could never emulate the weight and the power and the majesty of a *real railway*. I had dreamed for years of a railway in the garden, but frequent moves and far less frequent cash surpluses, were the opposite of what was needed! But *one* day I thought . . .

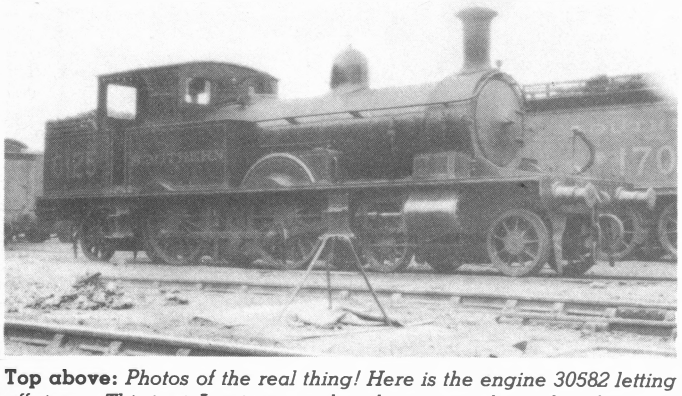
So in 1977, I decided to start getting ready for that day; I purchased a Highfield O gauge wagon kit, and a yard of Peco track. It was enough . . .! The thing actually trundled and clonked slowly along the metals, you could still see the wood-grain on the planks from half-a-dozen paces, and the spoked wheels strobed enticingly against the tracery of the axle-guards, without the need to project one eyeball into dangerously close, and quite unnatural proximity. After 26 years in the wilderness I was home again! (I genuinely admire the splendid work of many in the smaller gauges, and I am in no way denigrating their craft or their achievements, but for me, railways only start to *live* from 7mm upward!).

The Highfield wagon was soon joined by the rest in their range (what excellent products these are for economy) and a CCW kit of the M7 tank. I also joined the Gauge O Guild and the South Western Circle, both of which have been a valuable source of information in fur-



The train comes to rest, watched by two station staff, whilst a third takes care of the tea supply. The Platform has not yet been weathered so looks rather too clean.





Top above: *Photos of the real thing! Here is the engine 30582 letting off steam. This is at Axminster and coaling-up is taking place between trips. (Arthur North).*
Above: *This is the same engine as 30582 only thirty years earlier when it was numbered 0125 and in SR ownership. (P. Ransome-Wallis).*

Having taken on water, the engine driver is making the traditional tour of inspection to see that everything is running smoothly. That water tower and small coaling stage at Axminster would make a lovely model. (Arthur North).

A splendid view of the back of the engine with its bunker full of coal ready for the next trip. Date is 1961. (Arthur North).

thering my aims. I had already designed a layout for 'Axminster & Lyme Regis' in my brief excursion into 2mm scale and had carried out some initial research on the prototypes. The South Western Circle had compiled a fairly comprehensive portfolio on Lyme Regis, together with drawings of all the station buildings and revised track plans; so any remaining doubts on a suitable prototype were quickly dispelled.

The track layout was drawn as accurately to scale as possible, although condensed by approximately ⅓ overall to accommodate the distance from the buffers to the engine shed on 3 baseboards 6ft 6in x 2ft 6in. By carefully retaining the relative positions of the various features the compromise is far less noticeable than might have been expected; it is still possible to accommodate five coaches and a tank locomotive in the main platform and there is ample room in the yard for shunting a variety of wagons. The road overbridge, however, has been positioned on the layout just beyond the engine shed in order to provide a scenic break before the line immediately runs into the fiddle yard – in practice this road bridge is another few hundred yards away, and round a gentle curve. The real thing is also in rather dull concrete – I have preferred the greater aesthetic appeal of mellow brickwork! It might be more accurately re-positioned if more space in a permanent site does become available.

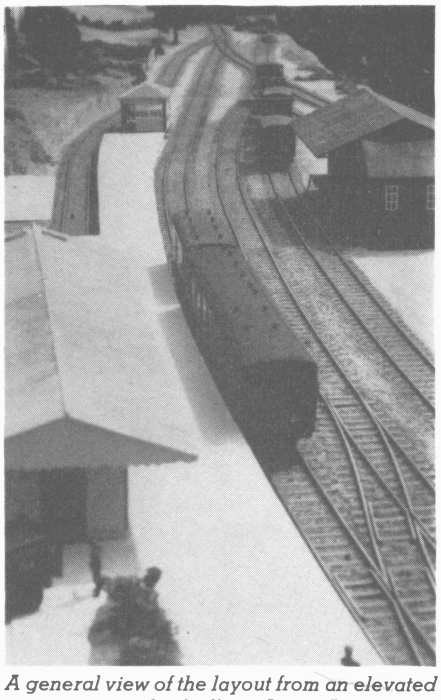
Baseboard construction follows well established principles and deserves only brief mention: 2½in x 1in timber 'grids' topped by ½in chipboard, cut roughly to shape for the track layout, leaving open areas for the purely scenic additions, allowing the 'land' to drop below the track level where appropriate.

Hinged legs are attached (initially a height of 3ft was selected; this has since been reduced to 2½ft as more manageable for sitting down when operating) and the boards are joined by steel hinges on each side, the original hinge pin having been knocked out and replaced as the two halves re-engage to achieve accurate alignment. The boards are fairly crude and rather heavy, but quite easily handled by two people, and perfectly serviceable to date. The fiddle yard has yet to be constructed at the time of writing but is intended to be the simplest form of sector plate, simply to allow some operation before a more permanent larger site for the whole project can be established.

Peco track is used throughout, with all turn-outs made up from scratch to suit the site, most being on a gentle curve one way or another. The double slip was a bit daunting, but was less difficult than feared, although as a first attempt perhaps only adequate for its undemanding site just beyond the engine shed; traffic over it is light and invariably at a crawl! In view of the amount of ironmongery in this piece of trackwork, the rails were soldered to copper-clad sleeper strip, but otherwise point construction utilised the more authentic appearance of Peco chairs to match the standard trackwork. However a disadvantage of the material used by Peco for their rail chairs and crossing 'timbers' is that the plastic does not weld by use of normal solvents, as I had hoped. Evostick is used, and is generally satisfactory, although rather messy in trying to coat a large number of small areas. Whether turn-outs thus constructed will stand up to outside weather, I'm not yet sure. Does anyone have any first hand experience of this?

An ⅛in plastic foam base, cut roughly to shape from large sheets, is stuck to the baseboard with Copydex and this is again used to fix down the track, being aligned by eye whilst the glue is still elastic and held lightly in place by pins as required. Ballast is genuine fine shingle (of the right admixture of colours but alas from a Spanish beach smuggled through customs on return from holiday in a bulging plastic sack!), laid between the sleepers dry and then congealed with a 1:1 diluted Copydex solution, plus a few drops of washing-up liquid as a wetting agent, carefully applied drop by drop from a suitable nozzled container. The rail sides are then painted rust, and the entire area of sleepers and ballast sprayed with a weak 'dirty' paint, absolutely matt, which will obscure the slight glaze on both the plastic material and the glued ballast – unless you are modelling a rainy day – when the original effect could be beneficial!

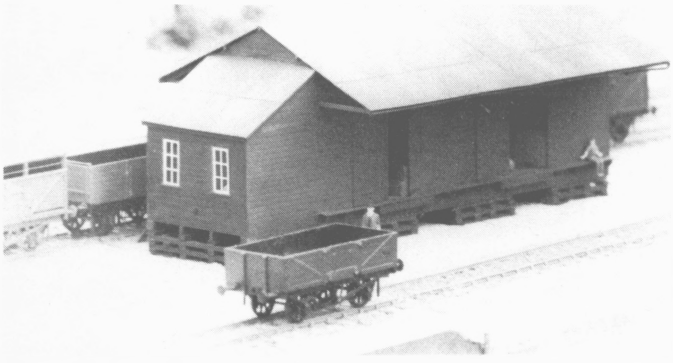
Electrics are simple, but with all turn-outs electrically operated and lighting to the station buildings, there is still enough spaghetti underneath! In practice, there was only one engine in steam at Lyme Regis, except on Summer Saturdays, but provision has been made on the layout to hold several locomotives; as far as is practical this is by the usual means of track being isolated or energised by the setting of the turn-outs.



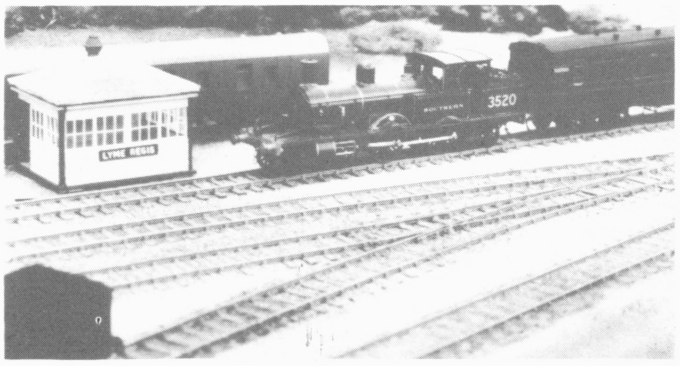
A general view of the layout from an elevated position near the buffers. Lyme Regis is an ideal country terminus for reproduction in miniature.

Scenery is for the most part a Polyfilla base spread over a roughly shaped basic substructure of expanded polystyrene – offcuts of packing blocks usually turn up fairly frequently and for large flat areas, ceiling tiles lightly supported and stuck together are ideal. I must confess that I much prefer this to the more recent Jack Kine method of a cardboard matrix covered with squares of gauze which I have also tried – probably fine for his exquisite 'set-pieces' but more time consuming for large areas in gauge O, and anyway my cardboard strips went soggy and saggy when plastered, whereas polystyrene stands up well and is very rigid when the plaster skin has dried hard.

The white plaster base is then painted with gloss paint in appropriate hues of green, shading to yellow and brown, and used as a glue for sticking down small bushes, hedging, and general scrub, made up variously from lichen, horsehair and animal wool; much of the latter is first-hand sheeps wool gathered



The Lyme Regis Goods Shed is a fine bit of scratch-building which exactly duplicates the original.



A view of the Radial arriving from Axminster and passing the beautifully made signal box.

from thistles and barbed wire fences from hillside farms! Such bushes are also liberally coated with paint and the whole area covered either with flock powders (short grass) or finely ground foam (foliage and scrub) and fine sawdust for larger leaves. With various colours blended in drifts, including much in natural yellow/straw colours (grass is rarely plain green), a pleasing effect can be obtained, without the need for further spraying, as long as the paint used for glue is not so thick as to fully swamp the basic colour of the scenic powders. Bushes, shrubs and sapling trees usually grow in abundance along any country railway line, and I think such profusion and variety can often be neglected by modellers. By sticking such shrubbery to each side of the baseboard joints, the gap is easily concealed, but avoid making it a dead straight hedge unless it obviously should be. Trees are constructed from varying strands of wire, soldered up to form the trunk and branches, with the finer twiggery formed from a base of gauze or matted wool, depending on the shape required, and then painted and liberally coated with small lumps of chopped lichen, foam, etc, and when dry, finished off with the finer foliage as for the bushes. The roots of the trees that invariably show above ground are bent out from the base before being turned at right angles to slot into suitable fine holes drilled into the 'ground'. White PVA glue will hold the roots firmly in place, and mould them into the surrounding ground. When dry, the roots should be touched in with paint and flock as necessary.

Trees are modelled to various prototype species with the aid of a text book, but the largest varieties are reserved for the back of the baseboard, where a diminishing scale is deliberately employed to give an added feeling of space and perspective. This blends in well with the backscene, which I have deliberately kept as simple and low key as possible; any attempt at the slightest detail in a backscene will immediately create problems of perspective when viewed from other than 90° angle, and can in any event often protrude unduly and miss giving the effect of distance it is trying to create. The one exception I have made is to introduce a suggestion of the Victoria Hotel beyond the buffers at Lyme Regis, a notable feature of many photographs of the prototype. The '3D' trees surrounding it largely avoid ugly errors in perspective when viewed from an acute angle, as certain of the photos will show.

Buildings are constructed from Slater's Plasticard and Thorntons 'corrugated sheet' along fairly traditional lines, and are fitted internally as far as is reasonable, with internal lighting. This really creates additional character at night, but unfortunately I have not yet got around to providing coach lighting. All buildings were constructed with the aid of drawings and photographs from the South Western Circle, and my wife was largely responsible for the Goods Shed and the Engine Shed which is the most recent addition to the line. Incidentally, she has also constructed much of the 'gated' set from the Highfield kits, and my daughter has contributed some of the completed wagons, so the project is something of a family affair.

The first locomotive to be completed was the CCW M7, largely in white metal, a material already familiar to me. This was followed by the T9 and 'Schools', based on the Firmco Kits from Charles Covey, and also under construction or preparation from such kits are a 'King Arthur' and 'Lord Nelson' (of course!), an O2 (MSC Models), a 'West Country' (Ravenscale) and an N Class. Apart from the O2, none of these ever appeared at Lyme Regis, and having promised an article for publication in this gauge 0 Guild Jubilee year, I just *had* to have a model of one of the three Adams 'Radials' that served this line exclusively from 1913 to their withdrawal in 1962. So I launched into my first ever effort of total scratch building from brass and nickel silver, and am fairly pleased with the result. Most power to date employs Pitman motors but the 'Radial' and the O2 have JH Motors, supplied complete with gear box and flywheel; they take up much less room, run beautifully and have quite adequate power for their prototypes.

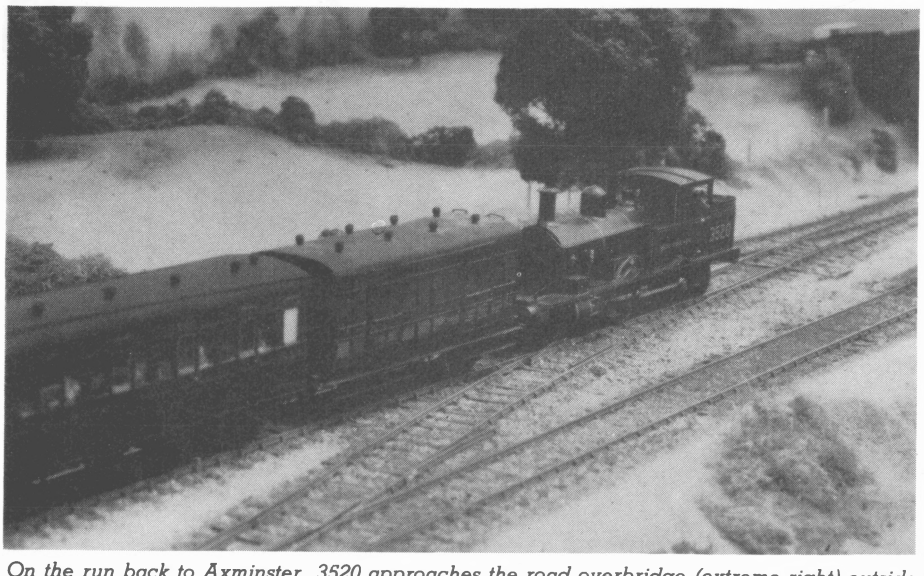
I have always aimed at overall realism, by which I mean capturing *atmosphere* rather than counting rivets (after all, Constable didn't paint every leaf on his trees, every blade of grass in his meadows, but his results were masterly). Apart from visual effects, an important part of railway ambience is the *sound,* and all locomotives are fitted with loudspeakers as part of the 'Q' sound control system. This has proved very effective, giving a synchronised exhaust beat and ancillary sounds as well as good motive controls. Rails are cut accurately to 60ft lengths and *only* at these points are soldered to brass pins tapped into the chipboard base, thus emphasising the resonance for the clickety-click of the wheels.

The coaching stock is still far from complete to represent the variety that could be seen at Lyme Regis, even in its latter years, but will eventually include a 4 coach rake of LSWR corridor stock (etched brass kits from the SW Circle); 2 coach rake of Bulleids with a loose 'open-third', (Classic models) and a similar rake of Maunsell stock, all to be added to for the future as time and finances permit.

Wagons are mostly Highfield or Slaters but the exclusive emphasis on the Midland for the covered vans is surprising. Distinctive 'Southern' types to be modelled from plastic card are scheduled to make their appearance in due course, but again it is a question of time.

So there it is. When I first embarked on Lyme Regis in 7mm scale, I prepared a '5 Year Plan', and I'm sorry to say that I am now running rather behind schedule! However, there is no doubt that I have thoroughly enjoyed all the research involved in trying to accurately re-create a prototype piece of Britain's railway heritage, and, for me at least, the satisfaction has been all the greater from working in a scale where the size and weight of the models takes on a real meaning. I cannot be alone for, in the three or so years since I 'took the plunge', I have been amazed by the increasing wealth of kits and items available to modellers in 7mm scale, mostly of a very high standard on which our friends in the trade are to be congratulated. I have plans for eventually creating a much more comprehensive layout in the garden (although the only preparations to date, are a few flourishing plants uprooted from the actual overgrown Lyme Regis station site, shortly before it was bulldozed beyond nostalgic recognition by redevelopment).

Perhaps in another 25 years it will be finished. It would indeed represent a remarkable development from my few sticks of firewood – it would probably also keep me just as amused.



On the run back to Axminster, 3520 approaches the road overbridge (extreme right) outside Lyme Regis station. For many years the Adams 'Radial' tanks worked the branch exclusively.

NEWTOR CITY TRAMWAYS

The two pairs of cottages in the photo are one model sliced along the apex of the roof. At the back can be seen the cattle pen and an old goods shed. The terminal stub at Coombe Road holds two cars. Nos 29 and 511 are ready for the start of timetable A, a normal weekday.

Part 2

Eric Slagg continues the description of his 4mm working layout

My objective was a layout where a working tramway system could be represented as faithfully as the limitations of 4mm scale would allow.

Rather than working haphazardly, I have compiled several timetables, or more correctly sequences of operation, depicting different situations: –

(A) Normal weekdays	5 cars	49 car movements	Mileage 287ft.
(B) Summer weekdays	7 cars	41 car movements	Mileage 388ft.
(C) Summer Sundays	4 (vintage)	27 car movements	Mileage 306ft.
(D) All Sheffield	7 cars	32 car movements	Mileage 189ft.
(With substitutes until all built – a short sequence repeatable)			
(E) Football Saturday	5 cars (plus 3 extras)	93 car movements	Mileage 772ft.
(F) Rush Hour	9 cars	128 car movements	Mileage 790ft.

The running time for these is 24, 40, 30, 21, 68 and 80 minutes respectively. Compiling them requires a lot of ingenuity, particularly to ensure 'balance'; nor should the fact that a car behind another has to stay there until the terminus, be overlooked. This is where the modification of the track at Park Gates by turning the refuge siding into a running loop has greatly improved operational efficiency. Most services from Bridge Street and short workings use City Square to terminate and all use the loop, while most from Coombe Road work through to West End.

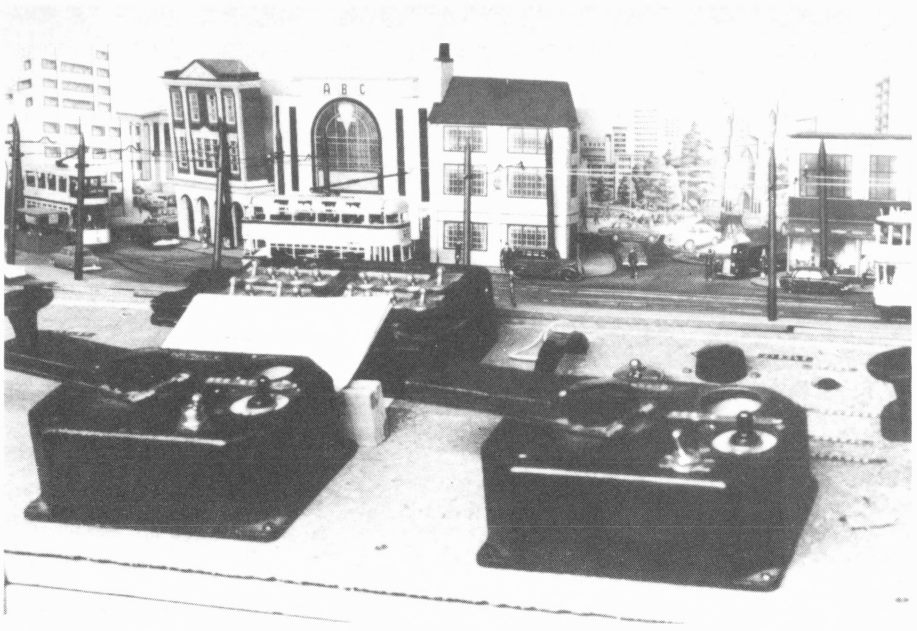
These bypass the loop and use section 26 as their stopping point. It no longer matters if any of these inward workings cross Bridge Street junction in the wrong order as the one waiting at section 26 will be booked out first.

Once a timetable is compiled, all the movements are transferred to a set of small index cards after everything has been 'test run' to check that the mistake hasn't been made of leaving a car stranded and blocking the main road! Each card has outward movements on the left and inward on the right, with several entries on each. An entry on both sides of the same line means that these are worked simultaneously, of which the most frequent is West End (or City) to Park (section 3), and Coombe Road to Park (section 26).

Both depots have set parking plans and each set of timetable cards has as the first card, a list of cars to be used and the depot shunting (if any) required to release them. It also shows where the starting point is for each. With every set, on completion, each car is back where it started from so the whole operation can be repeated or the cars returned in their correct order to the depots. Repeating the Rush Hour doesn't happen much as this takes 80 minutes, covers almost one seventh of an actual mile, and controllers and switches are being worked all the time. A sole operator finishes exhausted!

The terminal stub at Bridge Street only holds one car because of lack of space but West End holds two. This is used mostly for holding the out and back Circle car whilst others can pull on to the stub and depart. This is needed to allow other through cars to use the Circle, although there is just room for the Circle car to be held on section 13 while a through car passes behind it on the way out. Coombe Road terminal stub also holds two cars and this could be extended as much as required by taking in a spare track in the Arches depot, but all the timetables are compiled so that two is the maximum. I have at the back of my mind a cunning idea to slip in now and again into the normal set, a card for an unscheduled extra – just to see if order can be extracted from chaos!

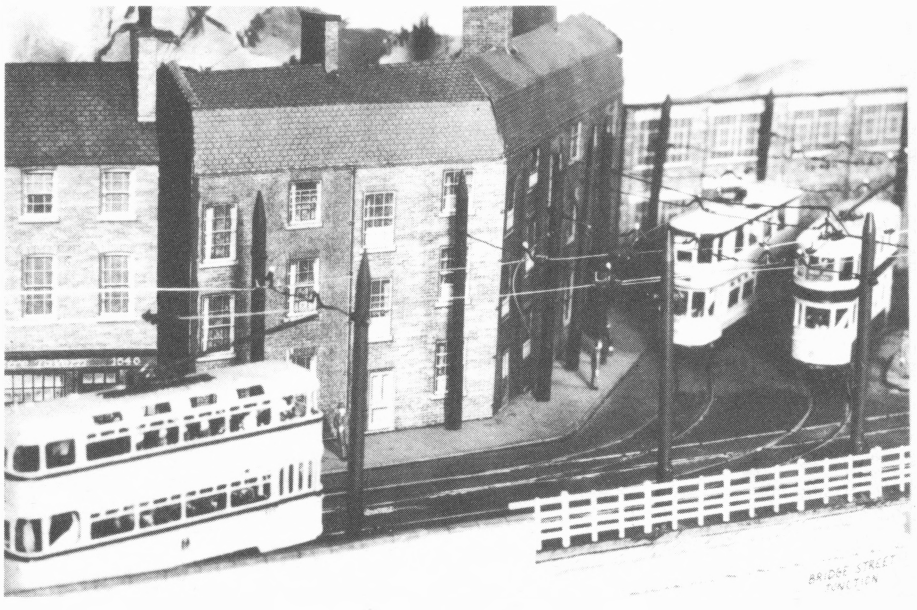
Car usage is fairly evenly spread but in the event of one being out of service for repairs or renovations, or if one has been idle for some time and needs an outing, I use a substitute board listing alternatives. Even with the complicated workings it is surprising how soon one can memorise what each car is and what is its normal route. The Rush Hour set needs a little care as a number of cars vary their terminus on Board 1 and also their outward route on Board 2. Just 'running a few trams' never gives the satisfaction that arises from operating with a



A set of timetable cards are between the controller and switchbox. Car number 7 is for the Circle on terminal stub at West End.

The subsidiary control panel for controlling Board 4. The left hand socket links it to the control panel and the right hand to this.

Right: *Bridge Street Junction showing numbers 33 and 29 passing by. The tram on the left of the picture is turning into Park Gates loop.*



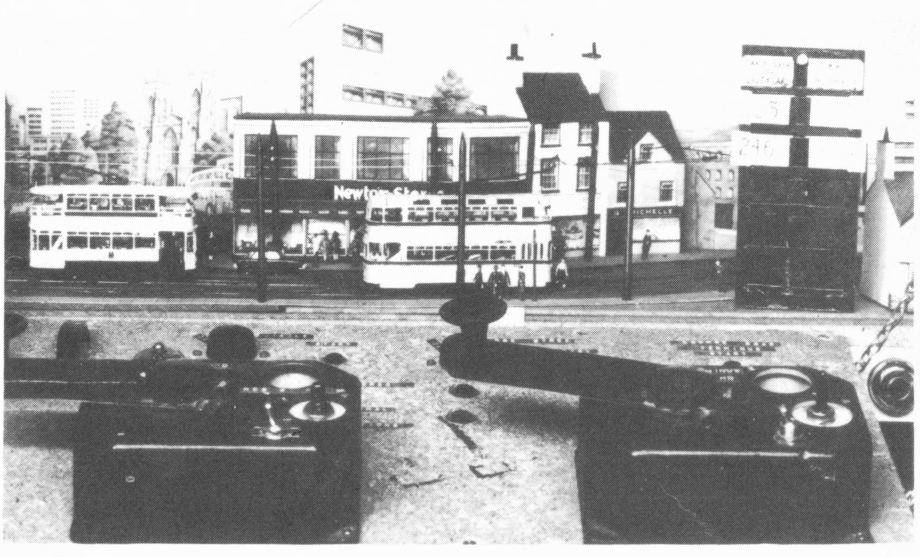
purpose.

From the start I have kept a record of all the timetable operations in a small loose leaf book with date, time taken, and number of de-wirements. I have a track plan on which every joint, frog, and crossing in the overhead is coded. A separate loose leaf book records the de-wirements, just car number and location. Particularly in the early days this was invaluable in tracking down faults. At intervals the results were analysed and if a site code appeared several times there was something wrong with it. If on the other hand a car number appeared with de-wirements at a number of locations, there was an obvious fault with that particular trolley.

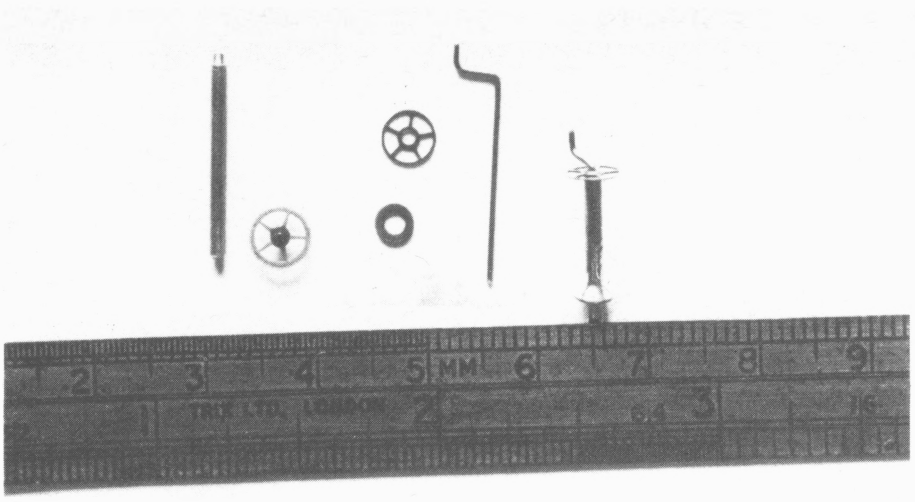
To add to the statistical interest, I measured each route and have a note of the distance covered by each car in each timetable. The astonishing result is that No 511 has now covered more than two actual miles, No 16 one and a half miles, and No 29 one and a quarter. Goodness knows what the actual figure for No 16 is, as this was one of the two, working the original small layout when it was a tiny addition to the railway 25 years ago.

Cars working specific routes have skates underneath to operate point motors where necessary. The entry to and exit from the Circle and the entry to Bridge Street all have trips to work these, while another trip reverts the point to normal after the car is clear. This not only helps the operator but is a source of wonderment to the spectator. Three successive cars from the City area can arrive at the Circle, Coombe Road, and Bridge Street without the operator touching any point switch.

If you want to scratch build, a 4mm tram is very much on the lines of a railway carriage on top of another, but there are now a good variety of kits available to get you started if your objective is a working tramway layout



Here is the substitute board for timetable working. Note that the appropriate information such as the terminus starting point, has been neatly labelled.



Left to right: *1/16 O/D tube turned down at the top; clock wheel,* **top:** *wheel with spindle knocked out and teeth filed off;* **bottom:** *10BA washer; pin wire bent to form the brake handle and finished part. After the wheel is fitted to the column, the top is burred over to retain it and the handle is dropped through with the end bent underneath. The washer is soldered to hold at the required height above the platform, being glued into a 1/16 hole which takes it. The wheel and handle both turn as per prototype.*

rather than a showcase model. Later, you can with advantage, combine kit and scratch building by using some kit parts and making up the rest. BEC kits and Meadowcroft Models both supply items that are otherwise difficult or time consuming to make. Brass pin wire makes realistic handrails and small clock wheels with the teeth filed off are ideal for brake wheels.

I expect that you will choose a kit as a starter. On receipt spread out all the parts on a piece of hardboard and, with the help of the drawing that comes with most of them, familiarise yourself with what each one represents. The next thing is to clear every bit of flash from each piece, using a sharp knife such as an Xacto or similar, and perhaps a small needle file for the ventilators and window frames. This can be quite laborious but any skimping with the job will greatly detract from the finished product.

Have a dry run fitting the parts together and holding in place with rubber bands to check that everything is quite square. Some suppliers suggest glue for assembling, but remember that all the parts fit together with a nil clearance so any layer of glue has to be very thin. A wedge of glue between, for example, the sides and bulkheads will give an overscale length or width and the roof will end up too small. If you have the dexterity and can take the necessary care, do as I do and use low melt point solder. My technique here is to scrape with the end of a small file, the two areas where the joint is to be made, hold them in place on a solid surface and apply a small touch of flux to the joint area. Then put a small fillet of the solder on to this and touch this with the iron. Keep the iron on the solder only and the heat will be sufficient to transmit it and flow the solder to the two parts being joined. On no account touch either of the two parts with the iron as this will immediately result in a hole in the casting or a little pile of whitemetal on the bench.

At this stage it is worth deciding on the programme for painting. A lot of the inside will be inaccessible when assembly is complete but will be still visible, (particularly the stairs) so although painting first gives most of the answers to the problem, remember that this must not be done where there is to be a soldered joint.

With some kits I have found that the chassis fits in such a way that there is insufficient clearance for things like trucksides and lifeguards above the road surface and I have had to make little blocks of 1/16in brass on the mounting brackets to lift the body that much.

Most mechanisms supplied are for two rail working and you can now test your completed tram on your railway track. It is a simple operation to convert eventually to overhead pick-up when you have your tram track built for it, as the whole thing depends on a working trolley which really works.

I have never glazed any 4mm models either tram or train as I am not happy that the 'glass' will still look the same after several years. With 4mm trams, glass is out because of the curved surfaces needed and plastic will, I feel, look worse than no glazing, if it eventually gets scratched or discoloured after much handling for repairs or renovations.

Destination indicators greatly enhance the finished effect. Except for 'Extra Car' on No 32 (the only one I got right with a mapping pen and white ink on black cartridge paper) I have produced these photographically. Printed on glossy paper they give a good representation of the real thing when viewed through glass. Cars working specific routes have them glued on but, like Llandudno and Colwyn Bay, show correctly only at the front. Side ones, where fitted so far, show the route taken when working outwards from West End or City as either via Bank or via Circle. My next 'gimmick' will have to be a working one but this may be asking a lot for 4mm!

Logically the next subject should be track but I am assuming you have available some two rail track on which to do some testing, until such time as you build the track for the sole use of the trams. The immediate essential is therefore the overhead.

You have to choose one of three options for current collection from it: (a) trolley poles with revolving skids (which I thoroughly recommend after not very successful experiments with trolley wheels), (b) bow collectors or pantographs, or (c) two rail pick up with dummy trolley and overhead. The latter is not really a worthwhile exercise as with the amount of work involved in constructing an overhead you might as well go just that little bit further and make it a working arrangement. For any enthusiast, the one thing to avoid is running with dummy trolleys just sticking in the air.

The basic parts needed are poles, hangers, stay wires (if not using bracket arm poles), frogs, crossings, and the wire itself. I use 26SWG nickel silver for this.

My poles are 3/16in dowel rod with the top 'turned' in a pencil sharpener. On the original section when it was behind the railway, these were merely pushed into holes in the baseboard with a pin through them to hold them at the correct height. For the new layout 120 of them were needed in a hurry so I decided on the same material but with an improved method of fixing. This consisted of a small tube rolled from brass shim to be a tight fit for the pole and solidly soldered to a small baseplate.

Extracts From Timetable F. (Rush Hour)

Starting Points : Car No (Section No). From depots in this order :
7(1-PB), 511(1), 522(Bridge Street), 527(5), 33(11), 32(3), 29(16), 16(Park A), 38(7).

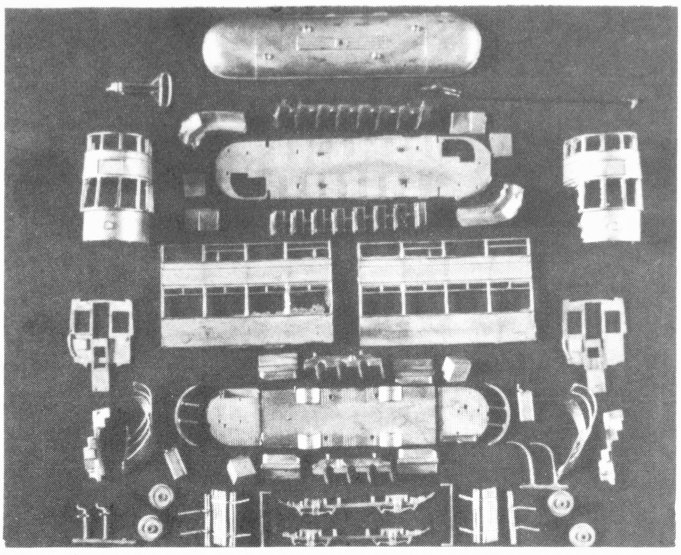
(No depot shunting required to release any)

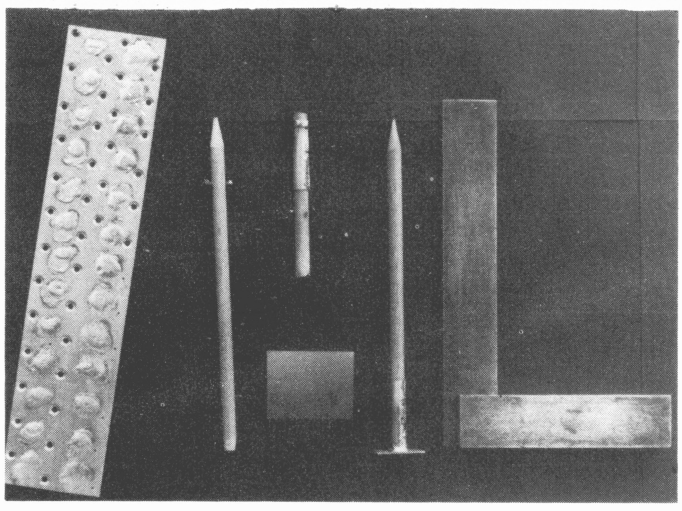
Card 1

Out		In	
		527	Red Lion – Sec 15
32	Park – Coombe Rd (sec 6)		
		522	Bridge Street – Park (B)
33	City – Park (3)	527	Sec 15 – Park (C)
33	Park – Bridge Street	16	Park – City
		38	Coombe Road – Park (26)
32	Sec 6 – PB		
511	West End – Park (3)		

Card 2

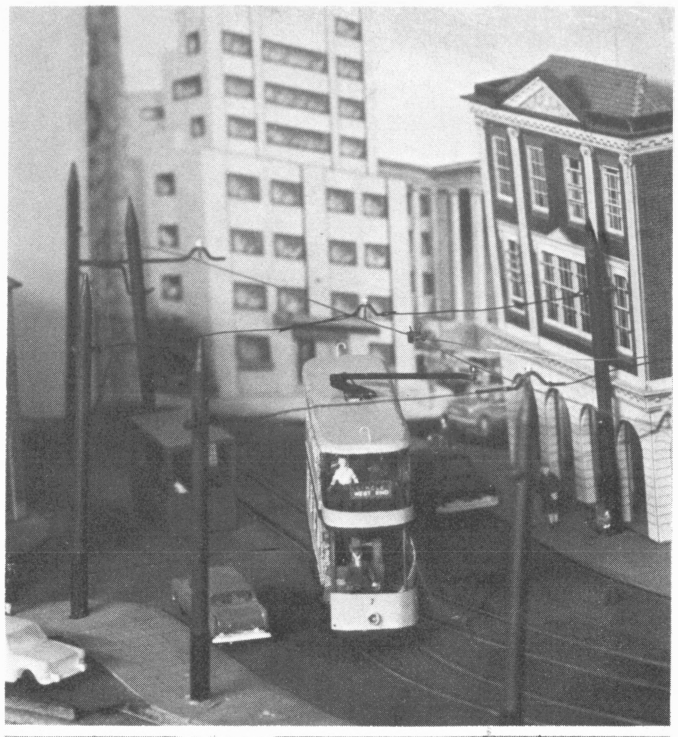
7	West End – Circle	38	Park – sec 12
16	City – Park (19)		
511	Park – Coombe Road (sec 7)		
		38	Sec 12 – West End (PB)
		522	Park – City
16	Park – Red Lion (sec 5)		
29	Park – Bridge St (sec 20)	527	Park (C) – Park (A)



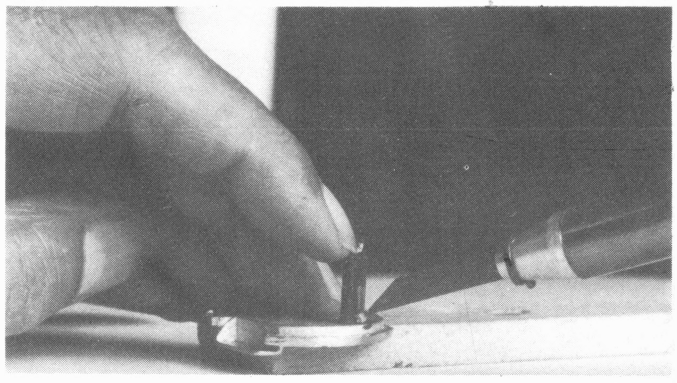


Top above: *This is a Varney kit and will need the floor cutting out to take a motor. The flash that has to be cleaned off is shown on the ends and the lower frames of the windows.*

Above left to right: *Bases marked out and drilled, soldered for fixing pole base. Pole is cut to length, stay wire is put in place and bevelled at the bottom for an easy fit into the pole base.* **Bottom:** *Rectangle of shim for rolling to form base.* **Top:** *Rolled tightly around a piece of pole dowel and soldered. Next is the completed pole, base and baseplate. To ensure soldering the base to the baseplate so that the pole is upright, the operation is done alongside an L square, with both standing on the work bench.*



Top above: *A view of number 7 tram arriving at West End. Note that the trolley is well off centre.*



Above: *A small blob of low melting point solder is placed on a spot of flux at the join of two white metal castings – being held in position by the fingers. The tip of the iron is directed at the blob of solder and held until it flows on each surface without touching either casting with the iron. The parts shown are the platform and controller of a 4mm tramcar.*

Exhibitions

The Shrewsbury Railway Modellers will be staging their Annual Model Railway Exhibition at the Priory School, The Quarry, Shrewsbury on October 22 – 23. Open 10.00 – 6.00. Adults 35p, Children 20p, Family £1.

The Talyllyn Railway Preservation Society, the Stour Valley Railway Preservation Society and Witham Model Railway Society are holding their third Model Railway Exhibition at the Spring Lodge Community Centre, Powers Hall End, Witham, Essex on September 12. From 10.15 – 17.15. Adults 40p. Children 20p. Working layouts, trade and preservation stands and demonstrations.

The South Hampshire Association of Railway Modellers are holding an exhibition at Southampton Guildhall, Southampton on October 3 and 4. Open 10.00 – 19.00 (Sat), 10.00 – 17.00 (Sun). Adults 80p. Children/Senior Citizens 40p. 13 working layouts plus static displays, demonstrations and trade stands.

Warley Model Railway Club are holding their annual exhibition at the Harry Mitchell Recreational Centre, Broomfield, Smethwick on October 3 and 4. 11.00 – 21.00 (Sat), 10.00 – 18.00 (Sun). Adults 70p. Children and Senior Citizens 35p. Family £2.00.

Chichester College of Technology is running two further courses on the Techniques in Railway Modelling, at Chichester College of Technology, Westgate Fields, Chichester, Sussex. The programmes for the courses will complement one another, each covering selected basic topics such as building baseboards, layout design, using flexible track, whilst also looking at more sophisticated ideas – handbuilt pointwork, constructing locomotives and stock, timetable design and research. The fee for each course of ten evenings remains at last year's figure of £15, payable either during the Enrolment Period, September 8 and 9 or at any other time before the commencement of each class. Contact Peter Bailey, either at the College (Chichester 786321, extension 260) or at home (Havant 471288).

The EM Gauge Society presents EXPO-EM (North) at the Masonic Hall, Great George Street, Leeds. Open September 12, 10.30 – 19.00 (Sat), September 13, 10.30 – 18.00 (Sun). EMGS Member £1.00, Non-Member £1.50 (includes free admission for accompanied ladies)

Come and view EM Gauge and 18.83mm layouts, listen to lectures, browse around.

Basildon MRG are organising the 4th Basildon Model Railway Show at Chowdhary County Primary School, Markhams Chase, Basildon, Essex, on Saturday October 10. Open 10.30 – 18.00. Layouts, displays, trade stands, refreshments, and large free car park. Adults 40p, Children/OAPs 20p.

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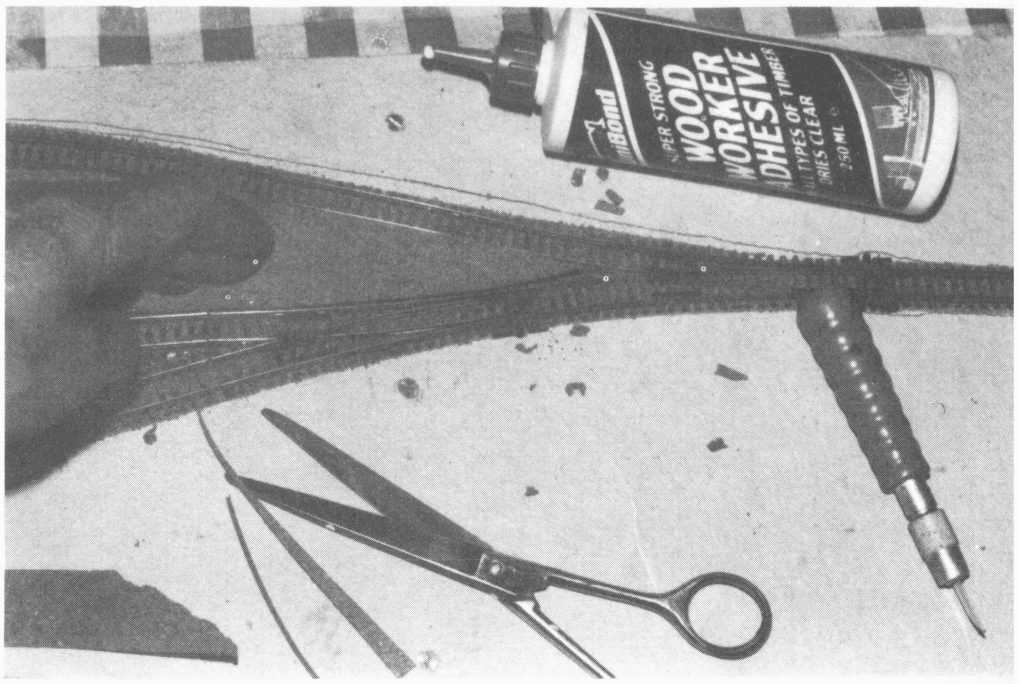
Loch Tay in N scale

This time we make a start on the scenic work

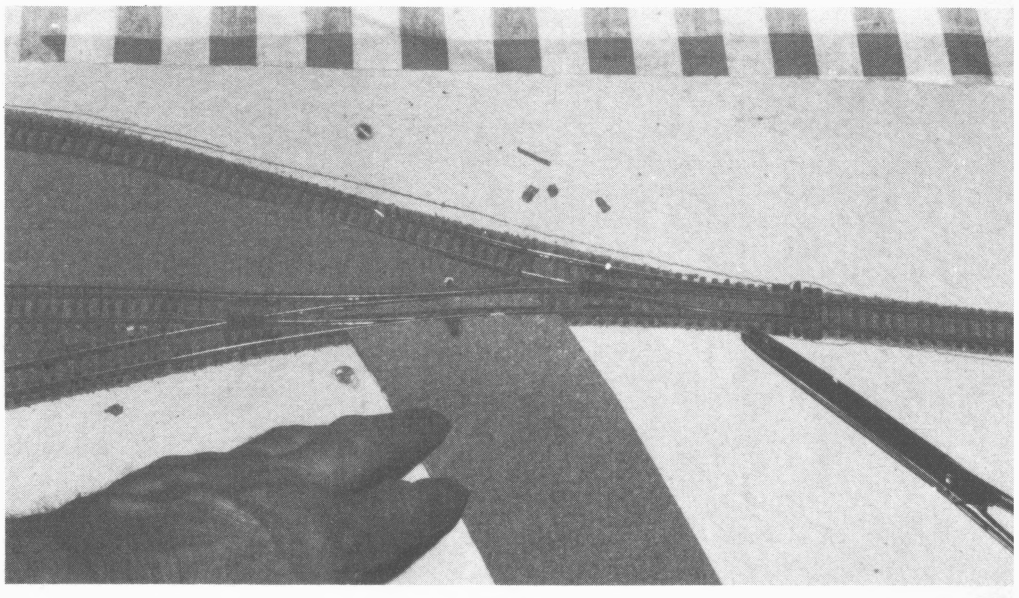
All the really major work of making the baseboard and laying track and ballast should now be complete. Nothing should be rushed, but the work this time is less frantic so you can catch up while carrying on with the less dramatic things shown here.

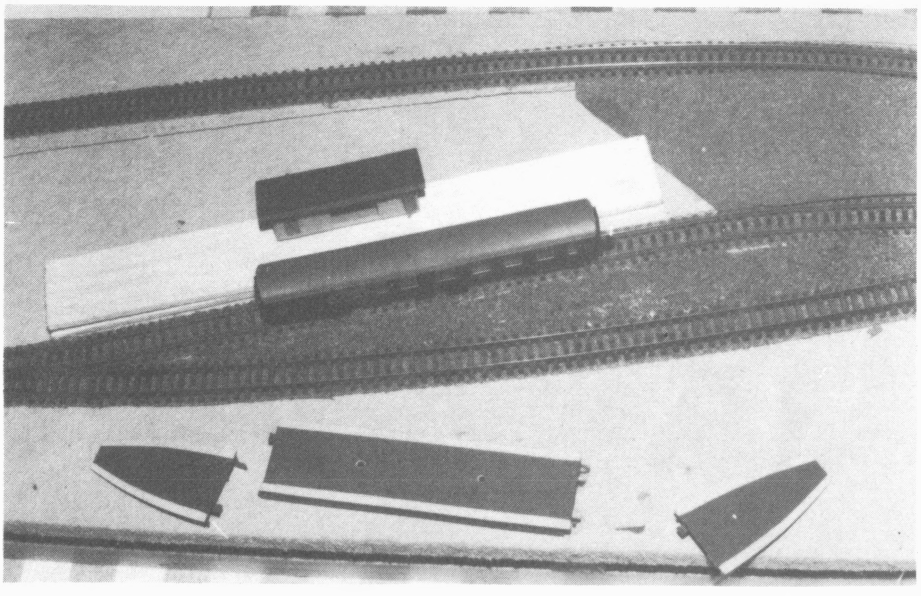
Layout building cannot be rushed and some of the work is more tedious than usual. What we do here is not all that exciting but it has to be done carefully for all the later scenic work will depend on it. The road making looks easy in just two pictures but actually it took more than two evenings to cut and lay so that everything was just right. It is most important that the edges are flush with the rail top and the centre piece must allow the rails to switch without obstruction while all wheels must pass satisfactorily. If any of the cork lifts higher than the rail top the trains will be derailed. We made paper templates to get the shapes correct for the sections of cork sheet. If you try and guess it you will just waste cork as it is all too easy to cut curves that are too sharp.

Grafar's halt speeds up the station building, as it is just right for Loch Tay, but you can, of course, scratch-build or use some completely different structure if you want a much more 'fictional' version of the Loch Tay layout. Don't glue the platform in place on completion, for next time we'll show you a further option which you might like to follow if you wish to ring the changes and run it as a German or American layout on some occasions.



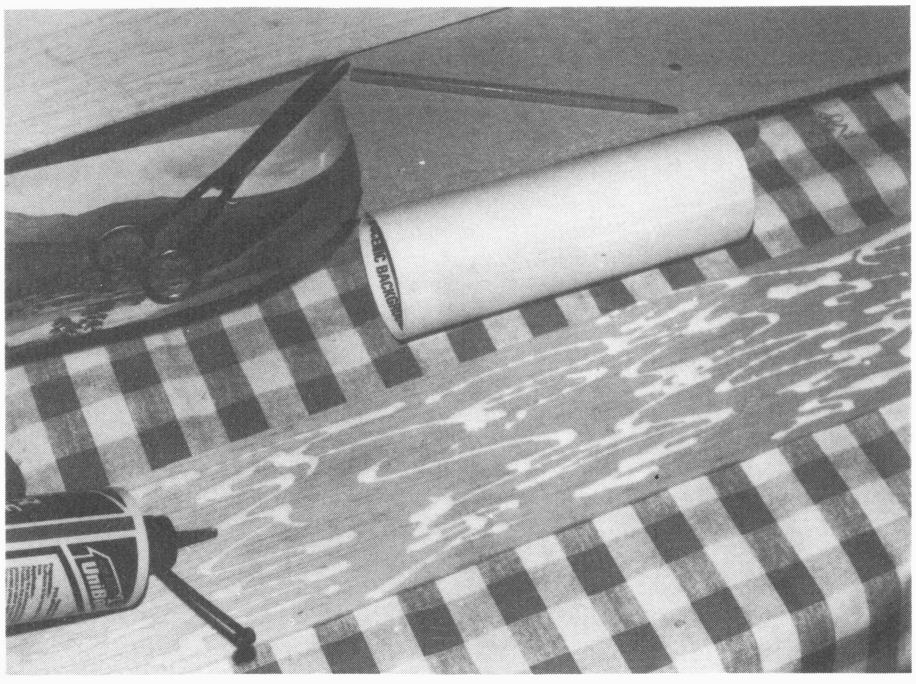
First scenic feature to be built in is the road approach for the station. If we follow the exact Loch Tay style, the road crosses the track right through the middle of the turn-out at the Killin end of the run-round loop. This is quite awkward for modellers and you may prefer to make the road cross the track with a right angled turn from the platform end instead. Here, however, we follow the original style using cork ballast sheet cut to shape with scissors to fit the curve of the track.



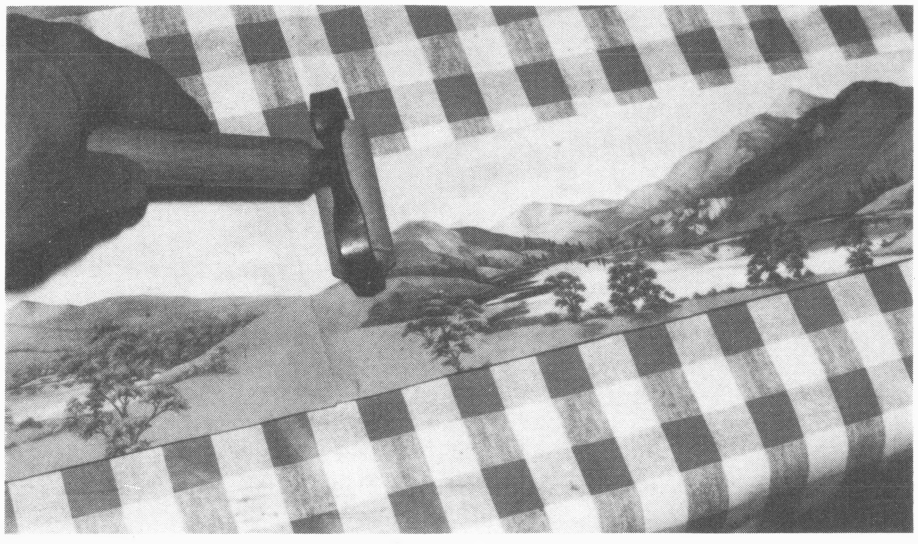


Above: *Here is the final stage of the road laying. To make the road surface level with the rail top a double layer of cork sheet is used. Where the road butts against the track, the bottom layer is cut to meet the edge of the track ballast while the top layer – the actual road surface – is cut to fit against the track, thus giving a true 'level crossing' effect. Note the tiny cut-outs here to allow the turn-out to be switched. This is most important – if you forget to do this the point is jammed for ever! A very thin strip is cut and pinned inside the stock rails for the centre part of the crossing. Make very sure all the wheels clear it.*

Left: *The Grafar halt is perfect for Loch Tay – almost an exact replica of the original small building in fact. The Grafar platform is not used, but keep it as it may be handy later. We made a simple low platform from two layers of ⅛in sheet balsa, cut to 253mm × 32mm. This gives a realistic low platform height just like the original and lower than most model platforms. Here we test clearance before cementing the two balsa layers together and holding them under pressure to set.*



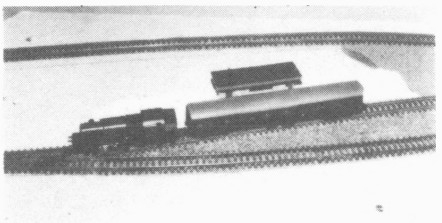
Left: *Very often a scenic background is left until last, but on this layout we are making it very early on for the simple reason that we have to make an embankment behind the station. If the scenic background is made first, we can judge the embankment height so that it won't obscure the background. We are using a metre length of ⅛in balsa sheet as sold in all big model shops. Though the Peco background sheets are rather commonly seen, we are using them again, this time because the mountain range sheet is almost exactly correct for the Trossachs area where Loch Tay is situated. The backscenes are cut to depth – removing the bottom and part of the sky – to fit the area of the balsa. Then rub PVA white glue over the balsa.*



Left: *Carefully line up the sheet over the glue, ensuring it is straight. Then use either a rolling pin, cylindrical jar, or an art roller (as here) to roll the scenery perfectly flat, eliminating all air bubbles. Glue will squeeze out at the edges – wipe it away with a cloth. Note that more than one sheet is needed for a metre length and here you can see a second smaller sheet butted against a larger sheet. When the glue is dry, the join is almost invisible. When all is satisfactory put heavy books over the whole lot and leave it overnight to set flat. If you don't do this the balsa wood will warp and stay warped and unusable.*

Below: *Next evening you can try your scenic background for effect. We used track pins to attach it temporarily to the edge of the board. With the unfinished platform in place you can run your first train and already the layout is beginning to come to life.*

Below: *Going back to the balsa wood platform, when the glue is dry you can sand the edges smooth and use a razor saw to cut the sloped ramps at each end. Then sand smooth.*
Bottom: *Next, cut fine black 'wet and dry' paper to size and glue it all over the top surface of the platform to depict the asphalt finish, an effect it does well. 'Wet and dry' paper is sold in hardware and DIY shops. Then choose either brick or stone paper and glue this on the edges to complete the platform.*



Bridgend extra

The following points may be of interest:
(1) Enclosed copy of the WTT for this line. This shows a good variety of motive and rolling stock and even the passenger services are not confined to HST sets. I saw the 0612 Cardiff to Swansea parcels when travelling to London as mentioned above. The make up was a single Class 45 loco, 5 Mk 2 empty carriage stock and a mixture of full parcels brakes and eight wheel parcels vans. Vans carried labels including Nottingham, Plymouth and Leeds.
(2) The footbridge (subject of a photograph in the article) carries a cast date of 1887. The current colour scene is metalwork blue, woodwork white. Supporting pillars and ornamental metalwork are picked out in red. This may have originally been painted for the Jubilee.
(3) Recent rail developments in this area include the connection by rail of the new Ford engine plant at Waterton. Whilst the connection is made to the Vale of Glamorgan line and not the main London line, it may make a more interesting model if trains requiring access to the engine plant were required to reverse from the down line in the station and take the Vale line from the Down side bay. In practice the Ford sidings cross the main A48 dual carriageway by an ungated crossing protected by traffic lights and red flashing warning lamps. Two trains per day are used to deliver to the plant and remove completed products. The Ford sidings are simple with, I believe, three spurs and a headshunt for the privately owned six wheel diesel shunter used there.

Jon Wills, Laleston, Bridgend

Bridgend Station Down Line WTT Winter 1976/77.

0117	Willesden	Danygraig	Freightliner
50	Paddington	Swansea	Passenger
0257	Bristol	Milford Haven	Mail
0355	Paddington	Milford H	Sleeper/Newspaper
46	Acton	Carmarthen	Milk empties
0407	Paddington	Milford H	Passenger
0452	Severn Tunnel Jct.	Swansea	Empties
0546	Dagenham	Swansea	Ford traffic
0612	Cardiff	Swansea	Parcels
0733	Stratford	Danygraig	Freightliner
0750	Severn T.J.	Llandeilo Junct.	Empties
0807	Cardiff	Milford H	DMU
0913	Paddington	Swansea	HST
32	Trafford Park	Danygraig	Freightliner
1021	Paddington	Swansea	HST
1103	Paddington	Fishguard	Passenger
16	Paddington	Swansea	HST
1221	Paddington	Swansea	HST
37	Severn T.J.	Margam	Steel products
1314	Paddington	Swansea	HST
1421	Paddington	Swansea	HST
1514	Paddington	Swansea	HST
1538	Eastleigh	Port Talbot	Coal empties
1626	Paddington	Swansea	HST
37	Paddington	Swansea	Premium parcels
1714	Paddington	Swansea	HST
42	Newport	Swansea	Passenger
48	Cardiff	Haverfordwest	Parcels
1807	Paddington	Swansea	Passenger
21	Paddington	Swansea	HST
1914	Paddington	Swansea	HST
20	Paddington	Swansea	Premium parcels
29	Severn T.J.	Margam	Steel products
40	Paddington	Swansea	HST
48	Paddington	Swansea	HST
2039	Paddington	Swansea	Passenger
2123	Paddington	Swansea	HST
47	Leeds	Swansea	Passenger
2224	Paddington	Swansea	Premium parcels
2237	Garston	Danygraig	Freightliner
2323	Paddington	Swansea	HST
39	Severn T.J.	Margam	Steel products.

These notes and sample timetable from Jon Wills supplement our 'Basis for a Layout' article in the July issue.

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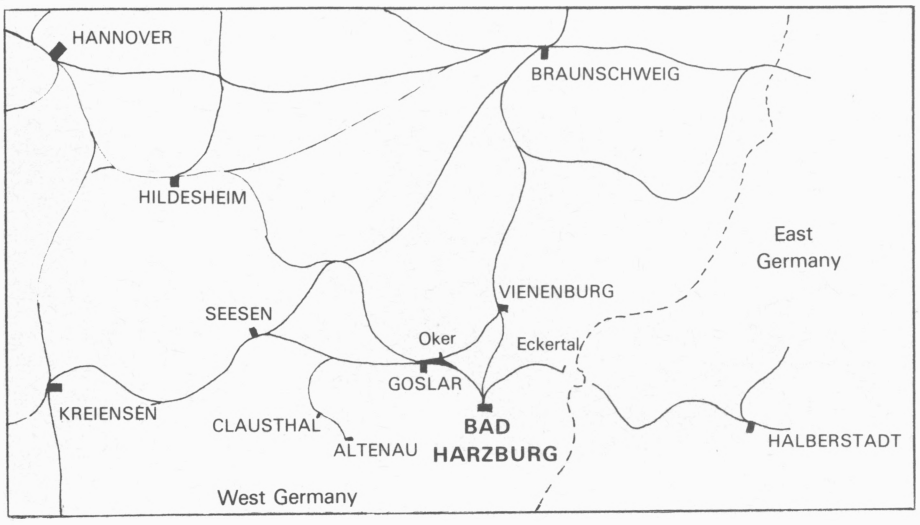
BAD HARZBURG

Basis for a layout: 1

Stephen Rabone discovers a delightful German terminal station.



Location map of Bad Harzburg, showing all routes mentioned in text – Not to scale.

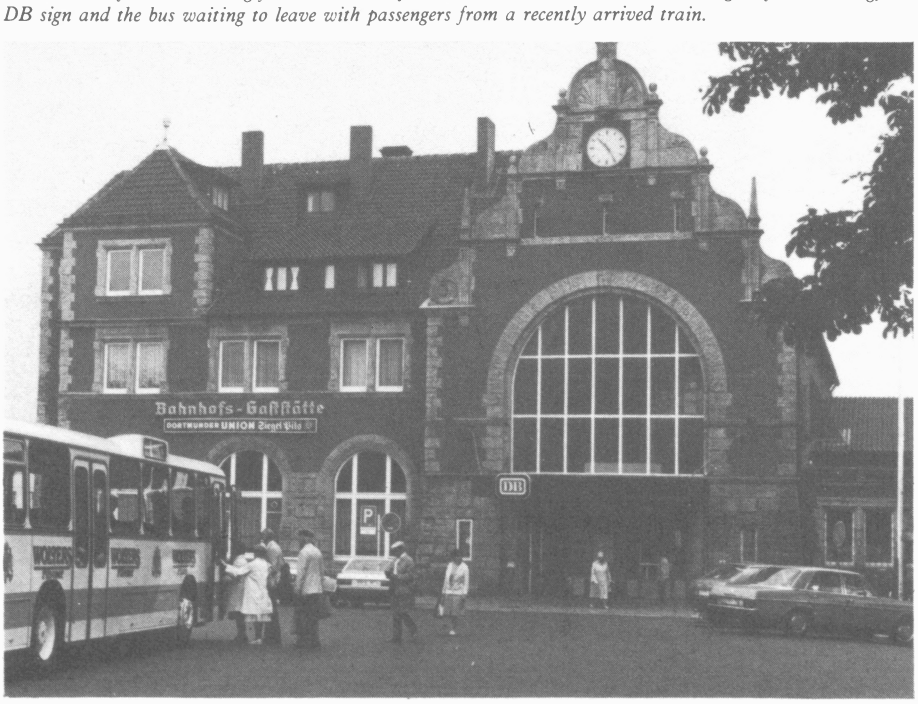
Tucked away close to the border with East Germany in the Harz mountains, lies the West German spa town of Bad Harzburg. The Germans are fond of 'taking the cure' and Bad Harzburg is one of the principal spa resorts of Northern Germany. The town lies in a beautiful setting with the 'Grosse Burgberg' towering above the town, and close by are hills that all but reach four thousand feet above sea level. Before this begins to sound like a tourist advert I should perhaps say that Bad Harzburg's importance as a railway centre is in no small way due to its pleasant surroundings. In summer it is a delightful town to visit for a holiday, whilst in the winter months it becomes the major skiing resort in Northern Germany. This explains its excellent train service which I shall refer to more fully, later in this article.

Looking at the Deutsche Bundesbahn railway map shortly before a recent visit to the country I 'discovered' this interesting station. It is a junction terminus situated at one corner of a triangle of lines which have their other angles at Goslar and Vienenburg. At Goslar the lines divide to run towards Hannover in the north, and Kreiensen on the main, north to south line, from Frankfurt and Würzburg to Hannover. In the opposite direction this line continues eastwards through Vienenburg to Braunschweig. The lines leading to Bad Harzburg are both single track, although that from Vienenburg was double until the end of the Second World War. In addition to these lines, there is also a third branch which only carries freight traffic to a cement works at Eckertal. A close look at the railway map reveals that this is one of those unfortunate lines that was severed by the partition of Germany in 1945. In fact it was once a through line to Halberstadt, which now lies in the East. Passenger services survived for a short time after the War but were eventually replaced by buses in the 1950s.

Bad Harzburg station is a fascinating place, being remarkably compact and full of buildings and structures eminently suitable for modelling. Its track plan is delightfully simple, and double slips, the bane of German modellers are completely absent. The station is operated in two parts, one side being used by trains bound for Goslar, and the other side by trains for the Vienenburg line. The two lines run parallel out of the station for about a quarter of a mile before the Goslar line climbs over the Vienenburg line on a bridge. The actual junction however is immediately outside the station where there are crossovers in both directions. In all, there are six platforms; the three on the Goslar side have awnings, thus reflecting the importance of this side of the station, which is used most by the long distance services. Only one of the Vienenburg side platforms has an awning. There are locomotive release crossovers at the ends of two platforms and these are long enough to allow two steam locomotives to run round their train. Double heading was common on these hilly lines in steam days; indeed heavy trains were banked out of Bad Harzburg until the diesels arrived.

The Eckertal branch climbs steeply from its junction just outside the station, so much so, that it needs a bridge to cross the road that the other lines cross on the level. On the east side of the station lies the extensive goods yard together with carriage storage loops. Much of the goods yard is given over to storage space for timber, which is felled in the mountains nearby. These open spaces appear to be largely surfaced in cobble stones. A headshunt runs behind the signal

The exterior of Bad Harzburg from the station forecourt. Note the restaurant on the right of the building, the DB sign and the bus waiting to leave with passengers from a recently arrived train.



box and appears to be on a steep gradient, presumably to allow gravity shunting. The goods yard is generally on a slightly higher level than the station, in fact the connecting line climbs quite steeply up from the main lines.

Steam operation only finished about 1975/6 and the turntable is still in existence, although it is now becoming rather overgrown. The locomotive facilities were very interesting and would make a good modelling subject. There was no locomotive shed at Bad Harzburg: all locomotives were serviced at the sheds at Goslar. However there were a few spurs off the turntable, and at one stage there appears to have been a small wooden 'lokschuppen' (literally loco sub shed). However, in the undergrowth near the turntable I discovered a low concrete viaduct of about 14 arches that sloped upwards towards a short embankment. On enquiry I found that this was a loco storage track which had been built in that spot because there had been no other space available due to the fall of the embankment to the river. The storage line was taken out of use after the war but still stands today. I

The station building from the platform side. The battery railcar has just arrived from Vienenburg. Note the point direction signal on the right and the stained glass window under the clock. Not visible, but beyond the platform two sign, are the driving wheels of the 012. Also notice the flowers on the platform, a frequent sight on German stations.

Monday to Friday Arrivals and Departures at Bad Harzburg – Summer 1971

0518/24	3001	DMU	Goslar-Vienenburg
0546/50	3906	DMU	Vienenbrg-Kreiensen
0602/16	3003	Tr.	Goslar-Vienenburg
0617	3004	Tr.	Bad Harzburg-Goslar
0648/			
0701	3006	Tr.	Vienenburg-Goslar
0658	3005	Tr.	Goslar-Bad Harzburg
0718	3912	Tr.	Bad Harzburg-Kreiensen
0725	3012	Tr.	Vienenburg-Bad Harz.
0728	3013	Tr.	Bad Harz.-Vienenburg
0752	3014	Tr.	Vienenburg-Bad Harz.
0757	E2001	Loco	Hannover-Bad Harz.
0759	3015	Tr.	Bad Harz.-Vienenburg
0822	E544	Loco	Bad Harzburg-Koln
0824	3016	Tr.	Vienenburg-Bad Harz.
0827	3017	Tr.	Bad Harz.-Vienenburg
0853/900	3018	DMU	Vienenburg-Goslar
0912/7	E2163	DMU	Goslar-Braunschweig
0926	E2166	Loco	Bad Harzburg-Hengelo TC to Flensburg via Goslar
1000	3031	Tr.	Bad Harz.-Vienenburg
1009	E1687	Loco	Bremen-Bad Harzburg
1024	3032	Tr.	Vienenburg-Bad Harz.
1017	5157	DMU	Goslar-Bad Harzburg
1052	E2012	Loco	Bad Harz.-Bremerhaven
1057/1101	E2170	DMU	Braunschweig-Kreiensen
1157/1203	3929	Tr.	Altenau-Braunschweig
1203	E2008	DMU	Bad Harz.-Hannover
1216	E2019	Loco	Hannover-Bad Harzburg
1231/50	E2167	DMU	Kreiensen-Vienenburg
1240/3	3930	DMU	Braunschweig-Kreiensen
1305	E1931	Loco	Kiel-Bad Harzburg via Goslar
1330	3041	Tr.	Goslar-Bad Harzburg
1333/43	E1935	Loco	Hamburg-Bad Harzburg and Kiel-Kreiensen
1336	E1510	Loco	Bad Harzburg-Hook of Holland
1345	3043	Tr.	Bad Harz.-Vienenburg
1410	E2021	Loco	Bremerhaven-Bad Harz.
1415	3940	Tr.	Braunschweig-Bad Harz.
1448	3060	Tr.	Vienenburg-Bad Harz.
1457	3061	DMU	Goslar-Bad Harzburg
1512	3062	Tr.	Bad Harzburg-Goslar
1514	3063	DMU	Bad Harzburg-Vienenburg
1541	E1511	Loco	Hook of Holland-Bad Harz.
1545	E2028	Loco	Bad Harz.-Bremerhaven
1554	E2174	DMU	Braunschweig-Bad Harz.
1604	E2171	Loco	Kreiensen-Bad Harzburg
1608	E1930	Loco	Bad Harzburg-Kiel via Goslar
1610	E2173	DMU	Bad Harz.-Braunschweig
1636	3947	Tr.	Goslar-Bad Harzburg
1644	3064	Tr.	Vienenburg-Bad Harzburg
1647	3453	Tr.	Bad Harz.-Braunchweig
1655	E2178	Loco	Bad Harzburg-Hamburg via Goslar
1712	E2177	Loco	Flensburg-Bad Harzburg via Goslar
1712	3066	Tr.	Vienenburg-Bad Harzburg
1716	3069	Tr.	Bad Harz.-Vienenburg
1716	4082	Tr.	Bad Harzburg-Altenau
1727	E2032	Loco	Bad Harz.-Hannover
1742/52	E2176	Loco	Braunschweig-Goslar
1750	E2179	Tr.	Seesen-Bad Harzburg
1828/38	4084	Tr.	Vienenburg-Clausthal
1837	E2037	Loco	Wilhelmshaven-Bad Harz.
1856	3087	Tr.	Bad Harz.-Vienenburg
1926	3080	Tr.	Vienenburg-Bad Harz.
1946	3081	Tr.	Bad Harz.-Vienenburg
2010	3092	Tr.	Vienenburg-Bad Harz.
2011/5	E2181	Tr.	Kreiensen-Braunschweig
2019	3090	Tr.	Bad Harzburg-Kreiensen
2036	3072	Tr.	Vienenburg-Bad Harz.
2047	3091	Tr.	Bad Harzburg-Vienenburg
2115	3094	Tr.	Vienenburg-Bad Harzburg
2117/22	E2183	DMU	Kreiensen-Braunschweig
2124	3096	Tr.	Bad Harzburg-Goslar

Key

DMU – Diesel multiple unit trains – in 1971 class 613 and 624

Tr. – Triebwagen (Railbuses) In 1971 all services operated by 798 class including those to the now closed Altenau branch

Loco – All locomotive hauled services. The services to and from the Hook of Holland and Hengelo were operated by Dutch (NS) stock. Note how the Hamburg to Bad Harzburg carriages off E1935 were used to form E1930 to Kiel, whilst the Kiel to Kreiensen carriages off E1935 returned to Bad Harzburg as train E2171 before later forming E2178 to Hamburg. Train E2176 was a rush hour locomotive hauled service.

Note: in 1971 several of the through carriage workings to Goslar were still hauled by steam locomotives.

The buffer stop area. An 'egg head' DMU stands at platform five with the rear of a Bremerhaven train at platform four and the Vienenburg shuttle railcar at platform three. Notice the neatly tiled circulating area, the flowers over the buffer stops and the rail behind the buffer stops.

believe it was used when through trains from Halberstadt to Goslar meant that there were many more trains reversing in the station than there are today.

I have taken the somewhat unusual step of drawing the track plan for Z gauge for reasons which I will explain shortly. Firstly, though, a brief word about the track plan. For various reasons I have not drawn the track layout in the goods yard as an exact copy of the original. Principally this is because it is extremely extensive, and frankly, I feel it is best cut down in size. However, I have retained the basic features of the yard. The station area and loco yard are, however, shown correctly, and have not been altered.

My reasons for drawing the plan in Z gauge are quite simple. I feel that Z gauge has been grossly neglected by the model press. To the best of my knowledge only one article has been featured so far on a serious layout and in the opinion of myself and the editor this needs rectifying. Secondly to reproduce Bad Harzburg to exact scale in Z gauge, only about twelve feet by two feet for the area from the level crossing onwards are required. Now a reduction to eight feet by eighteen inches still gives a much more accurate 'scale length' model than is possible in any other gauge, given a restricted layout size. I feel that a limited degree of compression is quite acceptable and even desirable. The ability of Z gauge to reproduce that spread out uncluttered look is one of the great bonuses in using this scale. One other factor that influenced the slanting of this article to Z is that most of the stock one requires for a current period layout is already available from Märklin.

Needless to say, this layout can also be reproduced in other scales. In HO I would suggest that one reduces the number of platforms to four and scale down the goods yard a little. One point worth considering is that most HO carriages are made to a scale of 1:100 which makes them considerably shorter in scale terms than the exact length Z gauge coaches. Therefore one can actually get about six vehicles in the space one would actually need for five full length coaches. I suspect it should be possible to build the Z gauge plan more or less unchanged in about half the space with a little bit of juggling. In N gauge I would attempt to build the layout in a space of about ten feet by two feet.

One of the most interesting aspects of Bad Harzburg is the number of interesting railway buildings and structures. Starting at the level crossing there is a tall, modern signalbox which is painted a deep blue. By the side of the River Radau can be found the derelict loco storage viaduct already referred to. This is being rapidly hidden by bushes and small trees. The main station signalbox is a very attractive structure as can be seen in the photographs. It might be possible to adapt it from some kits on the market, although Z gauge kits are not as yet produced in as great a variety as in the larger scales. However for those wishing to scratch-build, the approximate overall dimensions are 15 metres long, 5 metres wide and 9 metres high. The lower part of the building is in dark red brick, whilst the upper timber part is painted white and black. The roof is clad with grey slates. At the far end of the signalbox there is a large white board fastened to the wall underneath the windows, and facing oncoming trains, which has the station name written on in capital letters. A similar board can be seen on the front of the signalbox. Notice the small bay window to allow the signalman a better view of operations.

Undoubtedly the 'pièce de resistance' however, is the magnificent signal gantry at the station exit. This type was once very common in Germany but relatively few are now left. It should pose an interesting exercise in scratch-building. I would suggest that it could be fabricated out of Microstrip plastic card or possibly out of some of the very small girder section plastic. I do not think that it would be worth attempting to make the signals actually work. A suitable effect would be obtained if one of them was shown in the 'off' position.

Here is a close-up of the signalbox, where if you look carefully through the windows can be seen the tables and chairs used by the staff. It is small details like these which make your model authentic. Note the bay window.

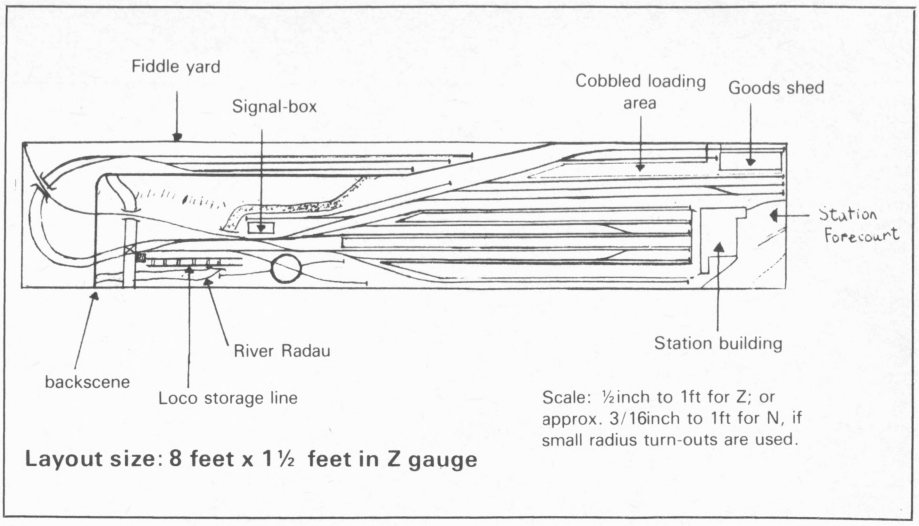
Coming to the actual station I would first of all like to scotch the myth that has grown up that all German stations have track level platforms. This may have been true once, but the DB is rapidly rebuilding even small stations so that they have platforms about two feet off the ground. It is quite normal to see even minor stations with high platforms nowadays. Most terminal stations and large city stations appear to have had them for some time, and those at Bad Harzburg are built of stone with a top surface varying from cinders to tarmac and even ornamental tiles in various parts of the station. A glance at the photographs will show this. The station awnings on the four platforms cover about one third the length of the platforms and are the typical steel post war variety. I believe Märklin produce a suitable platform set which includes these.

On the circulating area near the buffer stops is a sight to make all steam locomotive enthusiasts weep. On a short length of track stands the preserved six driving wheels of a scrapped 012 pacific. They were rescued from the works scrap yard at Braunschweig and put on display at the end of the 1970s. The sight is almost as cruel as the thought that only *Duke of Gloucester* cylinders were to be preserved! However it would make an interesting small set piece. I would imagine that it is possible to obtain spare 03 driving wheels from Märklin's spares service. A cheaper method would be to cut the wheels from plastic card and paint them red. Mounted on wire axles on a short length of track it could set quite a lot of discussions going. Don't forget to place a small notice nearby to explain to passengers what those enormous seven foot diameter wheels were!

When I walked into the booking hall at Bad Harzburg, for a moment I thought that I had made a mistake and entered one of the local churches. There were marble staircases and, incredibly, a large stained glass window. Presumably this is a hangover from the old days of Bad Harzburg as a very superior spa town when only the best was good enough, including the station. Having seen a colour night-time photograph of the window overlooking the platforms, I think it would be worth modelling this and fitting an interior light for night running. The exterior of the station building is highly ornate and cries out to be modelled. There are heavy stone mullions around the windows in a light coloured stone whilst the walls themselves are stuccoed and painted a deep mauve. Again the roof is covered with slates. On the goods station side of the booking hall, the roof has an enormous skylight running almost the whole width of the building.

Coming now to the operation of the layout I referred earlier on to the variety of services operating into Bad Harzburg. These are listed in detail in the train arrival and departure table, but a few additional notes may be of use. The principal services run along the line to Hannover, and many of these convey through carriages for various destinations in North Germany, whilst there are several trains running into Holland, these bringing NS carriages to the station. One of these trains which used to be known as the 'Harz Express' runs to the Hook of Holland where it connects with the ship to Harwich. In addition there are also a number of through carriages that are destined for Kiel, Hamburg and Flensburg that are worked to Goslar before being attached to trains going north through Braunschweig. There are also one or two trains which actually reverse in Bad Harzburg instead of using the direct line between Goslar and Vienenburg. All locomotive hauled trains are worked by BoBo diesels of the 218 and 220 classes. Märklin produce models of the 216 and 221 which are visually very similar and in my opinion quite acceptable. In this tiny scale one has to look very carefully to see the difference. All loco hauled stock is of the standard 86 foot UIC type and again the complete range necessary is available in Z including both the painted variety of coach and the 'silver fish' type. Train lengths vary from two vehicles for the through carriage workings to Goslar, to an average of six to eight vehicles for the long distance expresses.

The only problem in Z gauge as far as stock is concerned comes when one wishes to operate the many multiple unit trains that work into Bad Harzburg. Märklin produce the little red railbuses of 798 class and the 998 trailer car. This is fine for the local services such as to Vienenburg, which were, until recently, operated by the 798s. In the last year or so these workings have actually been taken over by the battery electric railcars of class 515, but I think we can overlook this and use a railbus. Unfortunately though there is no long distance three car diesel multiple unit available yet from Märklin. The types that work here are the 'egghead' 613 class, (the DMUs from the early fifties) and the more modern 614 and 624 class. One possibility might be to scratch-build a body on a diesel chassis and adapt standard passenger vehicles, but I feel a better solu-


Fiddle yard
Signal-box
Cobbled loading area
Goods shed
Station Forecourt
River Radau
backscene
Loco storage line
Station building
Scale: ½inch to 1ft for Z; or approx. 3/16inch to 1ft for N, if small radius turn-outs are used.
Layout size: 8 feet x 1½ feet in Z gauge

As explained in the text the whole of Bad Harzburg can be fitted into 8ft x 1½ft in Z gauge with only slight compression of length. In 12ft you could reproduce it to exact scale length. For HO or TT a reduced length and fewer platforms and sidings could be used with no loss of character for a terminus of the Bad Harzburg type.

The station entrance with the magnificent signal gantry clearly visible. From left to right notice the shunt signals and the turntable control hut, then in the distance the three lines running parallel just after the junction. Just visible is the level crossing signal box and the trees surrounding the loco storage viaduct. On the right of the picture is the signalbox and behind it the built up ramp for the goods yard head shunt. Note the clock in the centre of the signal gantry and the numerous light towers over the junction area.

tion would be to use a 216 diesel on a three car set of 'silver fish' push pull vehicles. This is just the type of working that these push pull sets are used on in other areas of Germany where frequent reversals are necessary. As can be seen Bad Harzburg has a very busy service so reproducing it in miniature form should prove very interesting – I'm certainly looking forward to running the trains in and out of my Bad Harzburg when it's built.

For those modellers who prefer the steam age, Märklin produce the 03 express pacific loco, the 41 heavy freight engine and the 86 passenger tank, all of which worked into Bad Harzburg regularly. In addition the following classes used to work here in steam days: 01, 44, 50, 55, 56, 93, 94 and before 1940, the 95. An interesting period to model would be the mid-sixties when steam and diesel worked side by side. Steam age modellers will find that the basic pattern of operations has changed little over the last twenty or so years. When preparing this article I consulted the 1962 and 1980 timetables and found many trains running at virtually the same times as in the 1971 timetable.

Up until now little has been said about freight operations. This is deliberate, because as far as I have been able to ascertain, freight plays a relatively minor part in operations. The main types of freight traffic appear to be in timber from Bad Harzburg, using staunchion wagons, and coal and lime to the cement works at Eckertal. In addition there is general freight traffic on a modest scale to Bad Harzburg. The lime and coal is carried in block trains and the branch appears to be quite well used, certainly the branch tracks were very shiny on my visit.

A view looking towards the hills with a 218 diesel standing on an express to Bremerhaven. This view shows the detail of the platforms with lights and different surfaces visible.

Photographs by Stephen Rabone

Probably half a dozen or so freight trains will suffice every day for the traffic that is on offer.

I hope this article has shown the operational and modelling potential of this fascinating terminus. Above all, consider Z gauge seriously; it deserves it. In answer to those critics who say that it's too small, remember how N gauge was 'too small' ten years ago and then look at 'Gransmoor Castle' and other such detailed layouts. Perhaps in another ten years we shall see a Z gauge equivalent?

Notes for other scales

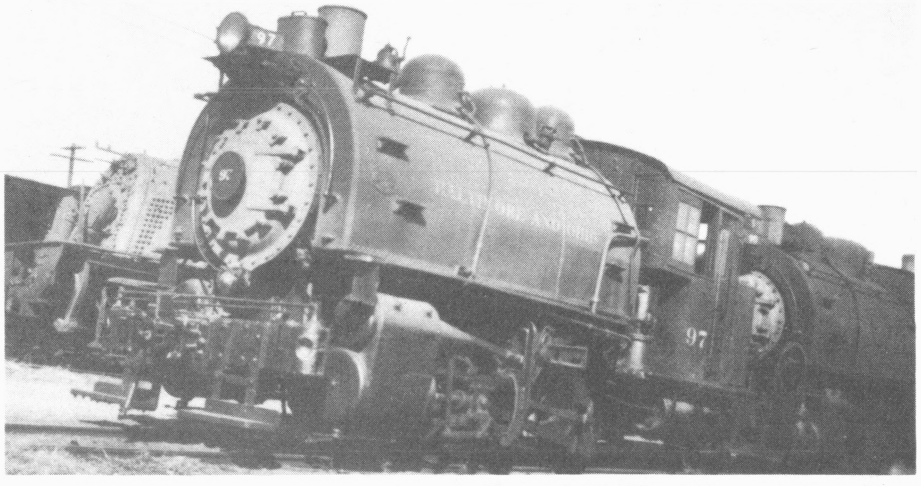
In N gauge virtually all the rolling stock necessary to operate Bad Harzburg in the diesel or steam age is available; only the 56, 93 and 95 have yet to be produced.

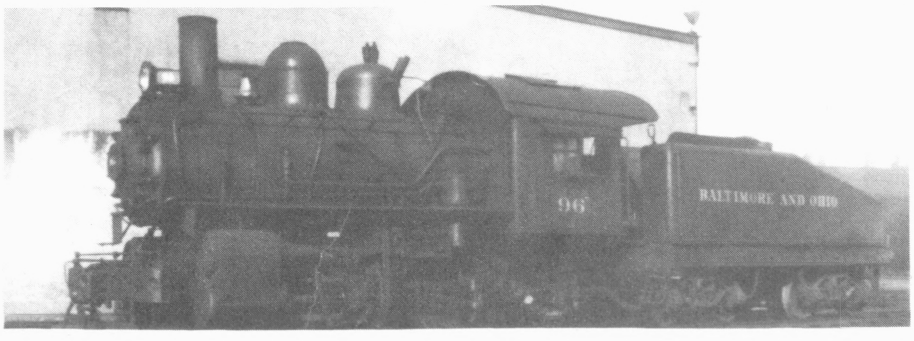
In HO all models have been produced except for the 56, which can of course be modified from other models.

ON AMERICAN LINES

'Little Joe' revisited

We go quite far afield for some of our locomotive conversions, and in the September 1980 issue we dealt with the detailing of the Rivarossi/AHM 'Little Joes', familiar in model shops even in Europe though they are actually a pair of classic American types. Further information is always useful, particularly with lesser-known types, and Dave Arnold, a British member of the B & O Historical Society has dug out these two fine views of the real locos from the depths of the archives. They are useful in supplementing the information given in our September 1980 issue since they show different angles from previously published pictures.





Above: *C-16s 97 and 98 are at Mount Clare loco yard on November 11, 1939, waiting for the evening switching shift out on nearby Pratt Street, Baltimore. This angle reveals that the smoke-boxes on both locos are finished in silver-grey graphite, not mentioned in our article, featured on the actual model, or indeed visible from other pictures. There is also a whistle on the steam dome side, even though other pictures show one mounted the other side of the dome as in our article. Finally there is an extra light on the pilot beam to aid switchmen working at night. These details must be added to the work described in our article (photo by Norman Perrin)* **Left**: *C-16a No 96 is at Philadephia, East Side, in 1938 and shows a whistle on the steam dome and extra piping on the boiler side, a more rounded sandbox top, and a rest for fire irons on the tender, again extra details to be added to the model (photo by the late Ralph G. Dunn).*

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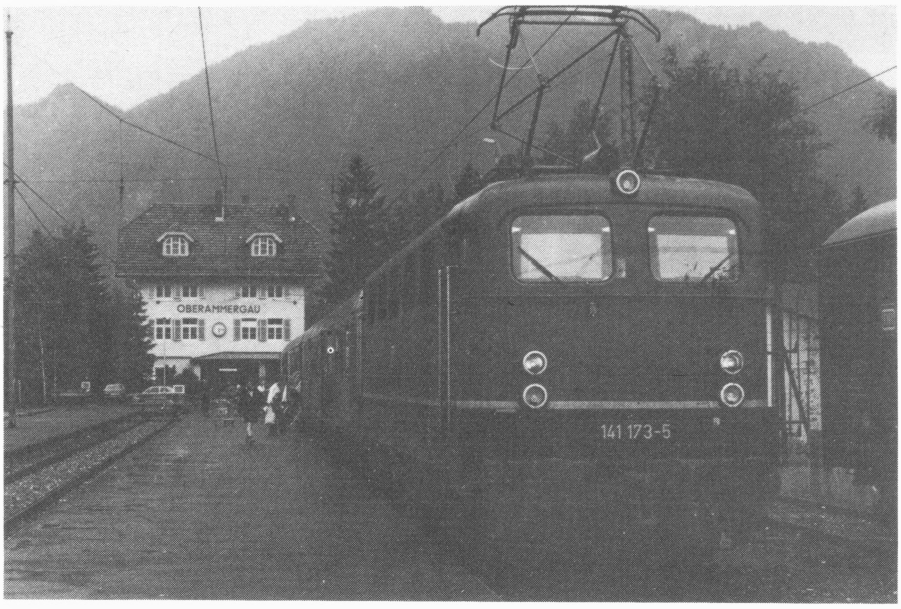
Push-Pull Operations in Germany

Steve Rabone gives the background to the subject and looks at the available models.



The Oberammergau push-pull train about to leave for Murnau behind a Bw Munchen Hbf 141. This is a good example of a regular two-coach working.

One of the most important differences in operating methods between the railways of Germany and British Rail is in the field of push-pull train workings. At present British Rail operates push-pull services only between London Waterloo, Salisbury and Weymouth on the Southern region, and between Edinburgh and Glasgow on the Scottish Region. This contrasts strongly with the situation in Germany, and indeed in several other European countries, where push-pull trains operate on a much wider scale.

The whole concept of push-pull operations in Germany has, since its introduction, been different to that found in Britain. In Great Britain push-pull workings were, until quite recently, synonymous with quiet rural backwaters where a small tank engine pottered up and down the branch with, at the most, two carriages. In Germany, however, push-pull trains have, since their introduction, been on a much grander scale. One of the most famous of these was the Henschel-Wegmann train built in the 1930s. This was a four coach high-speed train with power being provided by a streamlined 4-6-4 tank of Class 61, and operating between Berlin and Dresden.

It was after the Second World War, however, that push-pull operations really took off in Germany. During the early 1950s an increasingly large number of suburban trains in the big conurbations were converted to push-pull, or *Wendezugbetrieb*, first with steam locomotives and rebuilt carriages, and later with purpose-built stock and more modern motive power. Today these push-pull trains can be found all over Germany working an enormous variety of services. These include urban suburban trains, local trains on the main lines, branch shuttle services and even many long distance semi-fast or *Eilzug* trains which have to reverse en route at one or more stations.

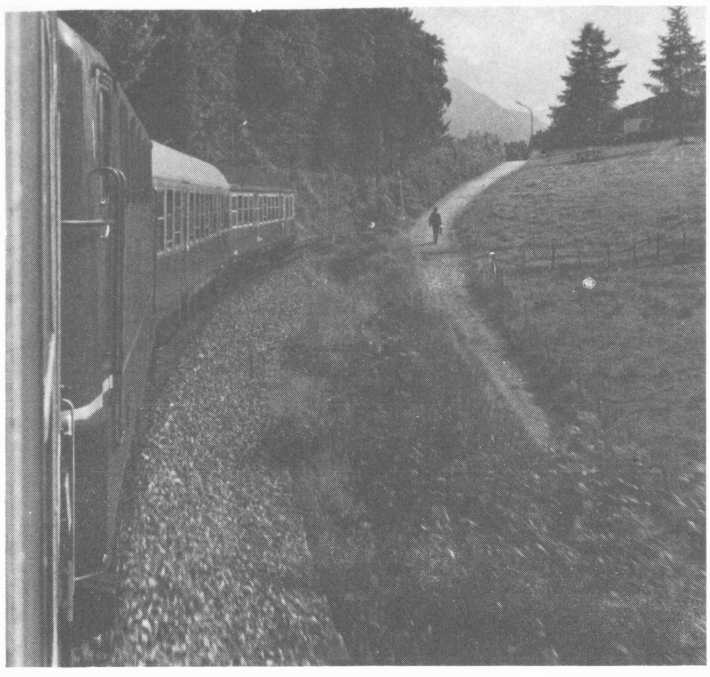
At first glance the operation of these trains in model form might seem a rather boring subject, but, as I shall try to show later in this article, this is far from being the case. Indeed, on a recent visit to Germany the variety of push-pull trains seen was quite incredible. One final point of a general nature that I feel should be made is that the policy of the Deutsche Bundesbahn in providing push-pull trains with powerful locomotives has meant that the contrast between the quality of many local services in West Germany and Britain is very great. The standard of comfort of the stock used is almost up to that of the long distance coaches, whilst the rate of acceleration and quick reversals of these trains gives a very high level of service. Just to give an idea what this type of operation translated into British terms would mean, imagine the rough equivalent, say four refurbished Mk 1 coaches propelled by a Class 86 or a Class 47. Then imagine that on a Crewe to Manchester local!

In the next part of this article I will examine the nature of the coaching stock used on push-pull trains in both West and East Germany, and give an idea of the most suitable models in the various scales.

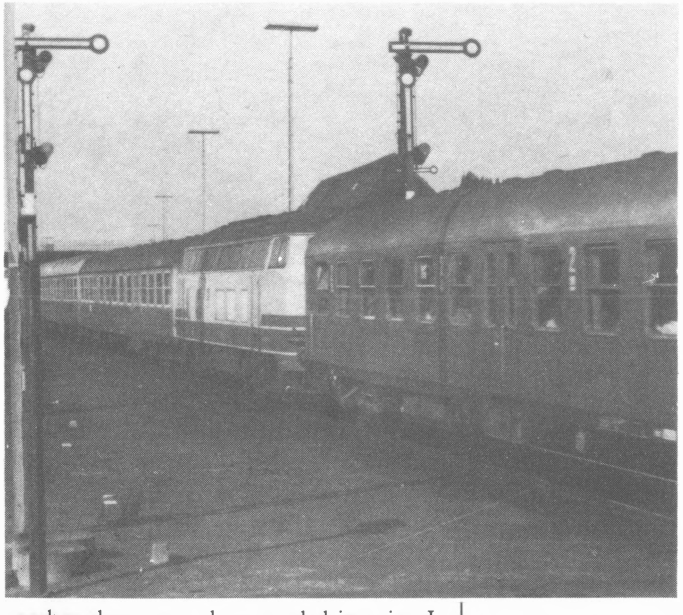
Coaching stock

In the early 1950s the first of the so called *Eilzugwagens* (literally fast train coaches) came into service. These are similar in appearance to the more famous 'silver fish' coaches, having centre doors, but were originally painted the standard green livery. Approximately 600 of these were built, there being four types of vehicle: an all 2nd class, a 1st/2nd class and two types of 2nd class coach with luggage accommodation and a driving cab for push-pull operations. Nowadays these are being repainted into the standard turquoise and cream livery. When they were first introduced many of the control cars were paired up with the rebuilt 'Convert' six-wheel stock. This gave a somewhat unusual appearance to a train. A typical formation would be control car, a pair of second class six-wheelers, and another pair this time with a 1st/2nd class coach and another second. The six-wheel

The latest type of push-pull set found working in the Hannover area. This is an Altenbeken to Hannover train, August 1980. Train propelled by a Class 141 electric.



Murnau to Oberammergau local leaving Murnau propelled by a Class 141. Note the photograph is taken from the through carriage, a composite vehicle, from Dortmund which is trailed behind the train locomotive.



An Eilzugwagen *control car on a Winterberg to Aachen working. This vehicle was coupled to a pre-war coach and the control cab was not in use. Screen wiper arm is visible above the cab window.*

Left: *Behind the locomotive were a further five coaches composed of 'silver fish' stock, three 2nds, a composite and an old style control car. The loco is in the new blue/beige colour scheme.*

Below: *A Köln to Düren Nahverkehrzug at Köln Hbf. The loco is a Class 141 and the leading vehicle is one of the full width control 'silver fish' coaches. Note the destination blind and the orange flashes. The formation is comprised of control coach, 1st/2nd class, and then two more 2nd class coaches.*

coaches always ran close-coupled in pairs. I also believe that some of the bogie 'Convert' coaches also ran in early push-pull operations. All these vehicles are available from Roco, although unfortunately the *Eilzugwagens* are now only available in the new DB livery, so a repaint to green would be necessary to reproduce these early workings. So far, no models of the *Eilzugwagens* are available in N gauge although a passable representation could be made by repainting a Minitrix 'silver fish' set.

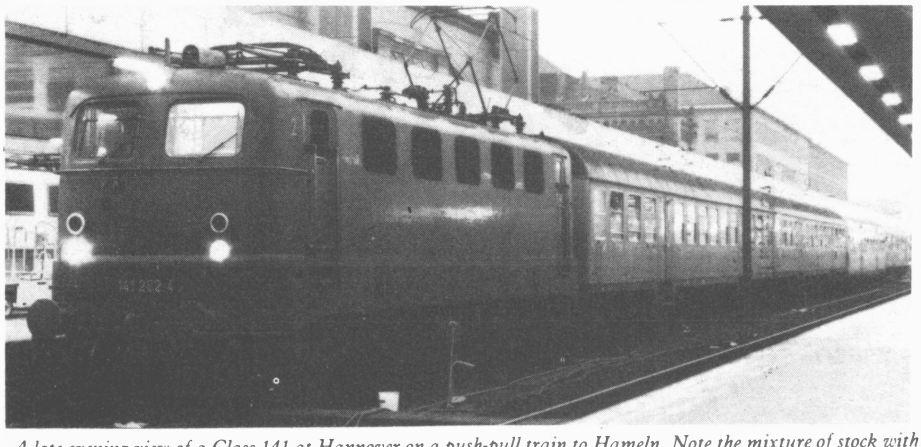
These early push-pull trains were operated largely in the Ruhr and the Saarbrücken areas and were often powered by Class 38 4-6-0s or 78 4-6-4 tanks. All the photographs I have seen show the locomotives coupled with the smokebox end of the loco next to the train. Certainly all in all a very unusual train in appearance. I believe these workings carried on until the late 1950s or early 1960s. Needless to say such an arrangement looks superb in model terms.

From 1960 onwards production began of one of the most famous and distinctive of

Push-pull train stock in miniature

Type	HO scale	N scale
Eilzugwagen		
2nd class	Roco 4279	
1st/2nd class	Roco 4280	–
2nd class/baggage/control	Roco 4281	
Six-wheel 'Convert' coaches		
2nd class	Roco 4214	Roco 2251
1st/2nd class	Roco 4215	Roco 2250
	HO scale	**HO scale**
'Silver fish'		
2nd class	Roco 4265	Fleischmann 5122
1st/2nd class	Roco 4266	Fleischmann 5121
2nd class/baggage/control (original type)	Roco 4264	Fleischmann 5120
2nd class/baggage/control (full width cab)	Lima (new 1981)	
	N scale	
2nd class	Fleischmann 8121	Minitrix 3038
1st/2nd class	Fleischmann 8122	Minitrix 3039
2nd class/baggage/control (original type)	–	Minitrix 3040
2nd class/baggage/control (full width cab)	Fleishchmann 8120	–
	N scale	
Rhein-Ruhr S-bahn set	Minitrix (new 1981)	
2nd class		
1st/2nd class		
2nd/control		
East German Double Deck Stock		
Four car set	Piko HO 426/1100	Piko N 5/4136-01 Berliner-Bahn TT 3730/3731
	426/1101	
	426/879	
	426/886	

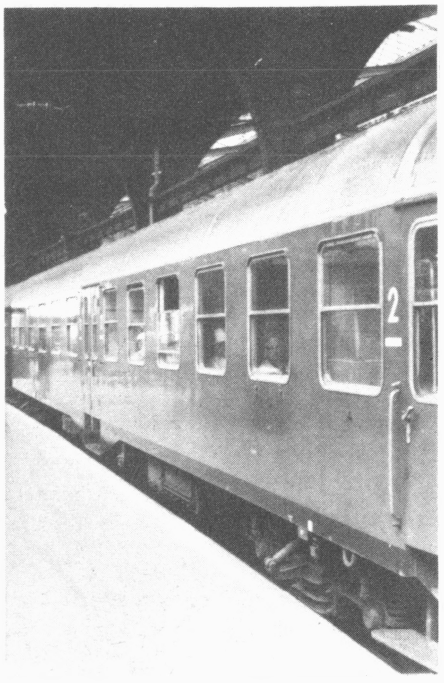
NB: Also available in CSD (Czech) and PKP (Polish) versions.



A late evening view of a Class 141 at Hannover on a push-pull train to Hameln. Note the mixture of stock with one of the new Hannover area push-pull coaches in the middle of a 'silver fish' set.

European railway carriages, the 'silver fish', so called because of the mottled scale-like pattern on the unpainted body sides. Basically they were a development of the earlier *Eilzugwagen* but with two doors instead of one central one. There are four main types of vehicle as far as the modeller is concerned: the 2nd class of which there are over 3,000 in service; the 1st/2nd class vehicles with about 1,200 in use; and the two types of control coach. The first of these is similar to the *Eilzugwagen* control coach with two small windows on either side of the central corridor connection. There are round about 350 of these in service. From the early 1970s a new type of control car appeared. These have a much more streamlined appearance with a full-width cab, no corridor connection, a destination blind and originally an orange warning panel. Around 400 have been built. Following the introduction of the new livery these carriages have had their cab ends painted in the standard blue and cream livery. One other livery change has affected the 'silver fish' stock: the lower part of the coach originally painted black is now blue, as is all lettering.

'Silver fish' carriages are available from a variety of manufacturers. Both Fleischmann and Roco produce the 2nd, 1st/2nd and the



An Eilzugwagen *composite coach at Hagen. Livery is dark green.*

old style control coach in HO. Lima has just released a HO model of the new style control car with the cab end in the new blue and cream livery and they also make the other coaches necessary to make up a complete rake. In the other scales Fleischmann and Marklin make the complete rake with the new style control coach in N and Z respectively, whilst Minitrix make the complete set of vehicles with the old style control car. Virtually all models feature diode controlled white/red marker lights on the control cars. Beware however of mixing different manufacturers' models in the same train as there are considerable differences in appearance, indeed I would recommend that you try to see the various types before making your purchase as some capture the feel of the original better than others. This is particularly true in my opinion with the excellent Roco models in HO, although the N gauge models are all equally good.

All the HO models mentioned are, of course, modelled to a shorter than scale length. However Ade also make the various models to full scale length but of course at a much higher price. If you standardise on the short (1:100 scale) length coaches throughout it won't be obvious that there is compression.

The 'silver fish' carriages really epitomise the coaching stock of the DB push-pull trains from the 1960s onwards and no layout purporting to represent Germany at that period should be without at least one rake. It does need stressing, however, that the coaches referred to so far are by no means used only in push-pull services. It is just as likely that a control coach will be seen out of use being hauled in the normal way, and push-pull sets are frequently broken up and remarshalled with ordinary stock. In fact there are some control cars that are rarely, if ever, used as such, one example being the ones used on the Oberammergau branch. Until the replacement just recently of the old Class 169 Bo electrics by Class 141 Bo-Bos the branch control cars were used purely as

baggage cars. It is also perfectly in order to marshal a control car in the middle of an ordinary train, although the new type of control coach without gangway connections obviously cannot be used in this way. I have also seen numerous examples of push-pull trains running with a mixture of *Eilzugwagen* and 'silver fish' vehicles.

Towards the end of the 1970s a new generation of push-pull trains began to appear. One of these was the type with ribbed sides shown in one of the photographs. So far no model of this type has appeared. They have a very distinctive appearance with their large cab windows. As far as I know they operate mainly in the Hannover area and are probably the prototype vehicles for the new three car sets for the Rhein-Ruhr S-bahn services.

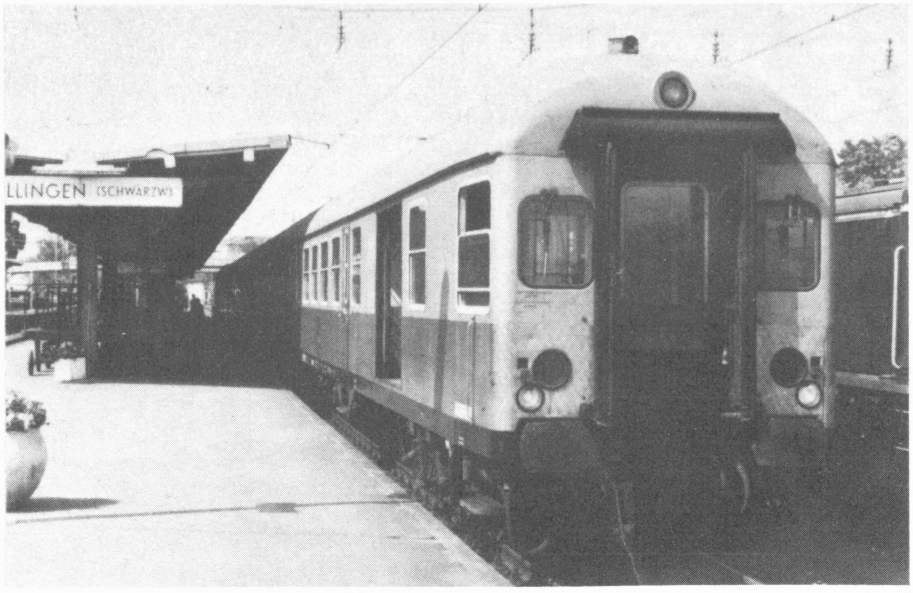
These new sets consist of fixed formation three-car units with a Class 111 Bo-Bo at one end and a control car at the other. They are finished in the light grey and orange of the Rhein-Ruhr S-bahn services, as are the locomotives. Apparently DB decided to build these push-pull sets rather than further Class 420 electric multiple units because it is cheaper and the locomotives are available for other duties. Recently a further development has occurred in the Rhein-Ruhr S-bahn scene. No 141-248 and three 'silver fish' vehicles have been repainted in a blue and grey livery in a similar style to the Class 420 electric multiple units. Unfortunately the new livery does not really suit the body style of the Class 141. Good news though for modellers because the manufacturing company, Minitrix announced a new set at the Nürnberg Toy Fair this year in N gauge. It must be stressed however that these new push-pull units are much more rigid in their formation than the normal German push-pull trains. They are more like locomotive propelled multiple units.

Push-pull trains can also be found across the Iron Curtain operating on the Deutsche Reichsbahn suburban service at Leipzig, Halle, Dresden and Magdeburg. These are usually run in four car fixed formation sets. The interesting feature of them is that they are double deck vehicles articulated within the set on three six-wheel bogies and two outer four-wheel bogies. There are control cars at either end of the set and no luggage accommodation is provided. They also turn up on other services outside the suburbs often coupled to conventional carriages. They are produced by Piko in HO and N gauge and by Berliner-Bahn in TT gauge. Looking very smart and attractive they are nicely compact for model layouts. Polish and Czech railways also use them and models are available lettered accordingly.

Locomotives in push-pull service

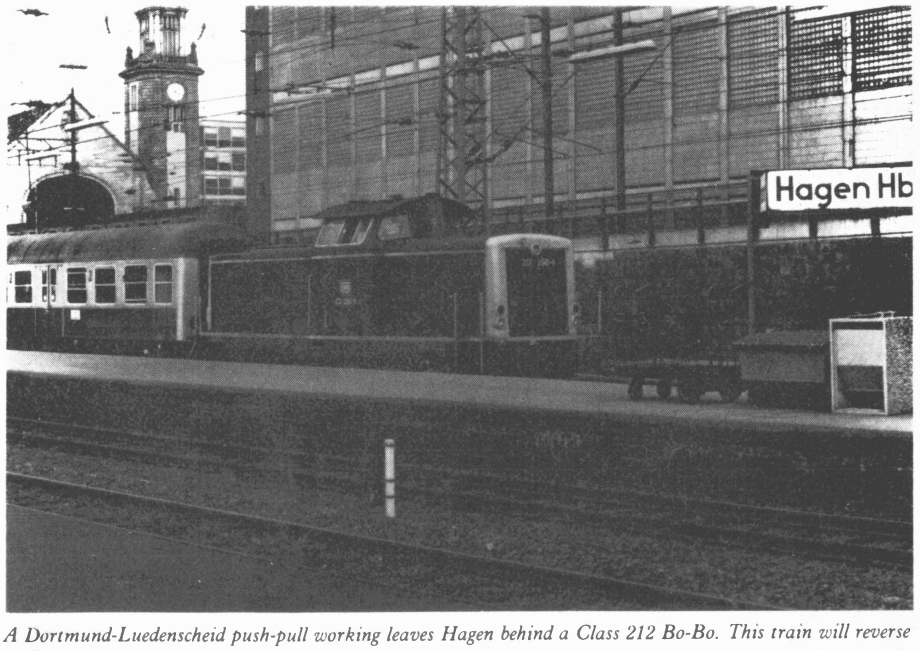
A wide variety of locomotive types have been used by the DB over the years on their push-pull services. I believe that the following list is complete, but there may be other types I have not heard of, and not every single locomotive of each class has the necessary control gear fitted.

In steam days, as already mentioned, the Class 38/10 4-6-0 and Class 78 4-6-4 tank were widely used. Also the modern Class 23 2-6-2 tender loco and the Class 65 2-8-4 tank



The original variety of 'silver fish' control car at Villingen on a working to Rottweil. Note the open luggage doors – often left like this in very hot weather.

Full-width driving end on the later type of control car. It is in the new blue/beige livery on the cab only, with DB logo. Rest of car is in the usual 'silver fish' finish (Chris Ellis).



A Dortmund-Luedenscheid push-pull working leaves Hagen behind a Class 212 Bo-Bo. This train will reverse at Brugge.

worked trains in the Saarbrücken and Frankfurt areas respectively, the former until the 1970s. With the exception of the Class 65 all are available in HO and N gauge. However the Class 38s used were fitted with Wannen *Kriegslok* tenders and Witte small-type smoke deflectors and the only model of this particular variant of the Class 38 currently available is made by Lilliput. The Fleischmann HO and N models are not really suitable, but a blind eye could be turned. Obviously, however, you could do a spot of converting. I have no record of what steam locomotives were used on push-pull workings in East Germany, and perhaps some reader can enlighten us. I have seen photographs of Class 41 2-8-2s pulling double deck stock so maybe these worked some of them. As Piko produce a Class 41, you can obviously duplicate this working in HO.

A Hamburg-Lübeck Eilzug runs into Lübeck Hbf. The formation in the front half of the train is interesting. 'Silver fish' old style control coach, Eilzugwagen *control coach, then three more* Eilzugwagen, *a composite and then two seconds. In the middle of the train is the Class 218 Bo-Bo.*

Many present day services are operated by diesel locomotives. Incredibly, however, in the late 1940s a number of 0-6-0 diesels of class V36 (available from Berliner-Bahn in TT and Minitrix in N) were built for push-pull operation. I believe they may have been used in the Ruhr district. Other diesels used on push-pull services have been the Class 280 in Bavaria for a short time in the early 1960s, and the larger Classes 211, 212, 216, 218 and 220 all of which are in push-pull service at the present time, although the days of the 220 are numbered. All these locos are generally available from several manufacturers in most scales (though the 218 is only in N scale). Note the only model of the Class 280 is from Lima.

In East Germany I believe that diesel hauled push-pull trains are in the hands of Class 118 Bo-Bos. This loco is available from Piko in HO and N and Berliner-Bahn in TT.

The principal types of electric locomotives involved in electrically hauled push-pull workings are the Class 141 Bo-Bos throughout Germany and the Class 111s in the Rhein-Ruhr area. Other locomotives used however include the now withdrawn Class 104 (in Northern Germany), the Class 144 (in the Stuttgart and München areas) and the Class 139 locos in the Black Forest. These are a variant of the Class 140 Bo-Bo fitted with regenerative braking for use on very steep gradients. A small number of Class 140 goods engines are also fitted with push-pull apparatus. In East Germany the majority of push-pull services are powered by two classes of post-war Bo-Bos, the 211s and 242s, although a few of the older 204 (same as DB 104) and 244 (same as DB 144) were in use until fairly recently. All the locomotives are available for both East and West German electrics, although unfortunately a good model of the Class 141 is lacking. I know there is a Märklin model available but I believe it may now be withdrawn.

Some typical train formations

(1) München-Bayrischzell (trains reverse en route): 218, 'silver fish' 2nd, 1st/2nd, modern control car.
(2) Saarbrücken area suburban services: 023 (until early 1970s), 'silver fish' 2nd, 1st/2nd, old control car.
(3) Traunstein-Rupholding (Bavarian Branch) 144, 'silver fish' 2nd, 2nd, old control car.
(4) Freiburg-Titisee (terminal station where it is difficult to run round train): 139, 'silver fish' 2nd, 1st/2nd, 2nd, modern control car.
(5) Rottweil-Villingen (shuttle service): 211, 'silver fish' 2nd, 2nd, old control car.
(6) Dortmund-Hagen Leudenschied (reverses en route): 211, cars as above.
(7) Bremen-Bremen Vegesack (short suburban branch): 141, 'silver fish' 2nd, 1st/2nd, old control car.
(8) Hamburg-Lübeck (outer suburban trains with quick turn rounds at busy terminal stations): 216/218/220 locos with up to 10 coaches, five in front of loco, five behind. Mixed 'silver fish' and *Eilzugwagen* coaches; 2nd, 2nd 1st/2nd, 2nd, old control car, in each half of train.
(9) Koblenz-Neuweid (shuttle service across Rhine bridge): 141, 'silver fish' 2nd, old control car.
(10) Murnau-Oberammergau: 169, 'silver fish' 2nd, old or new control cars. Not a push-pull working until 1980. Now 141 hauled.
(11) Rhein-Ruhr S-bahn services (early 1970s): 141, 'silver fish' 2nd, 2nd, 1st/2nd, old control car. These trains used to carry the 'S' roundel sign of the S-bahn services on the front of control car.
(12) Rhein-Ruhr S-bahn services (early 1980s): 111, S-bahn stock 2nd, 1st/2nd, control car.

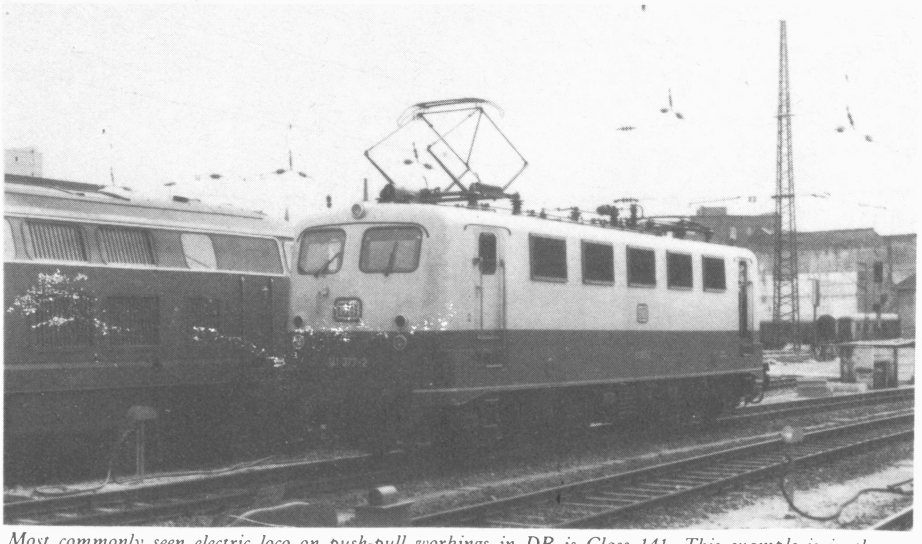
Note that there appears to be a general rule that only five coaches may be propelled, hence the split trains on the Hamburg-Lübeck line. This also allows rush hour formations to be easily increased by adding extra vehicles. In the above listings the class number of the loco usually used is given first.

Two final workings may be of interest. On the Oberammergau branch mentioned earlier the control car was not generally used. However in 1980 during the Passion Play season the 169s were replaced by 141s to allow the branch train to convey through carriages twice a day to Dortmund and München. The formation between Murnau and Oberammergau on these trains was control coach, 2nd class, 141, through 1st/2nd class. The control car was always at the Oberammergau end of the train. The photo shows the train with the through carriage from Dortmund. The Oberammergau branch was covered in detail in the July 1980 issue.

At the opposite end of Germany on the Lübeck to Kiel line I travelled on an even more unusual train. The formation of this local was an old type 'silver fish' control car, 2nd, Class 211 diesel, control coach, 2nd, and another 211 diesel. Halfway through the journey the rear half of the train was detached to form a return working to Lübeck.

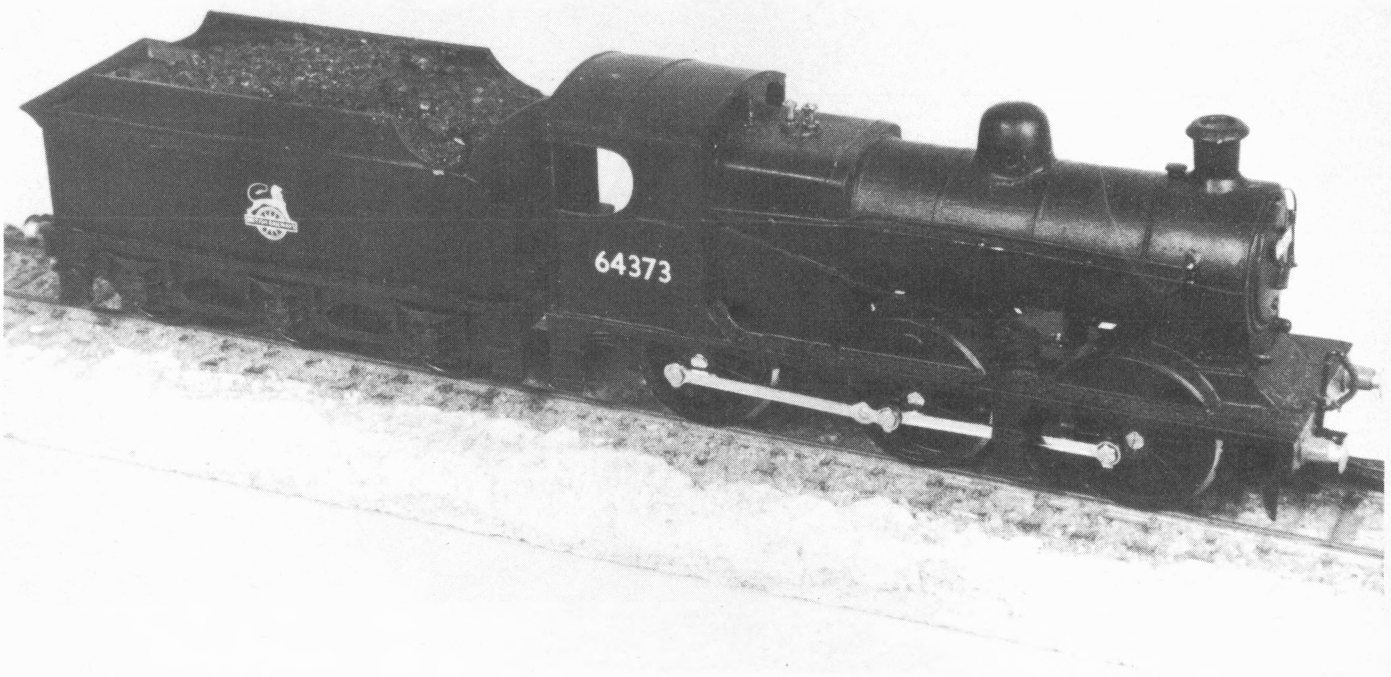
I hope this article has shown that push-pull German style is rich in variety and interest. Frankly after the last two examples I would not be surprised by any combination of vehicles. How about a Class 211 and a single control car? Has anybody seen one? Obviously on any layout push-pull operation is going to look good, and as the real examples listed show, push-pull trains are short in nearly all cases. For a minimum space freelance layout a Class 211 or a 216 with just a single old type control car would not look too far fetched and Oberammergau sets a precedent for just a control car and a 2nd class coach for the complete train.

Photo's by Steve Rabone unless otherwise credited



Most commonly seen electric loco on push-pull workings in DB is Class 141. This example is in the new blue/beige colour scheme (Chris Ellis).

The LNER J11/3 'Pom-Pom'



The completed conversion of the J11/3 64373. This is a fairly easy conversion from the Airfix Fowler 4F. In BR black finish the painting is easy too (Ken Sinfield).

Vivien Thompson converts the Airfix LMS Class 4F to LNER Class J11/3

When I had completed the conversion of the 4F to Class C *(Model Trains* May 1981), my son Richard said that it was about time I built a loco for him and how about a J11 for Christmas? There ensued a pleasant period in which we both delved into *ABCs* and RCTS LNER tomes for reference and finally he decided on J11/3 64373. His layout is based in the Sheffield area and this loco was shedded at Darnall (41A) during the period he required. He had found a photograph by K.R. Pirt of it in the 1961 Ian Allan *Combined ABC* and I used this photograph continuously while modifying the 4F.

In fact, the tender conversion followed very much in the steps of the Class C. Again the superstructure was cut away until only the sides and ends remained. I left the front of the tender as for the 4F, adding a curved piece of 0.030in to the top. The mouldings were cut from 0.020in styrene, fastened round a pencil with string and then immersed in boiling water. The two side pieces were glued in place first, left to dry overnight, followed by the end piece which was then glued between the two. The projecting side pieces were cut with a sharp knife when all was set. The raves from the 4F were carefully glued to the top of the side mouldings, ascertaining they were vertical as they dried. A new tender top and tank filler were made and glued on, followed by the 4F coal and various pieces of 'coal' from the scrap box, real coal being added in the gaps with Evostik. A buffer beam was cut from 0.040in and cast buffers and the 4F vacuum pipe added. Richard uses tension-lock couplings, so the Airfix one was left in place. The steps were shaped with a craft knife and the framing cut to look more like that on a GC tender. The tender was given two coats of Humbrol 145 Dirty Black.

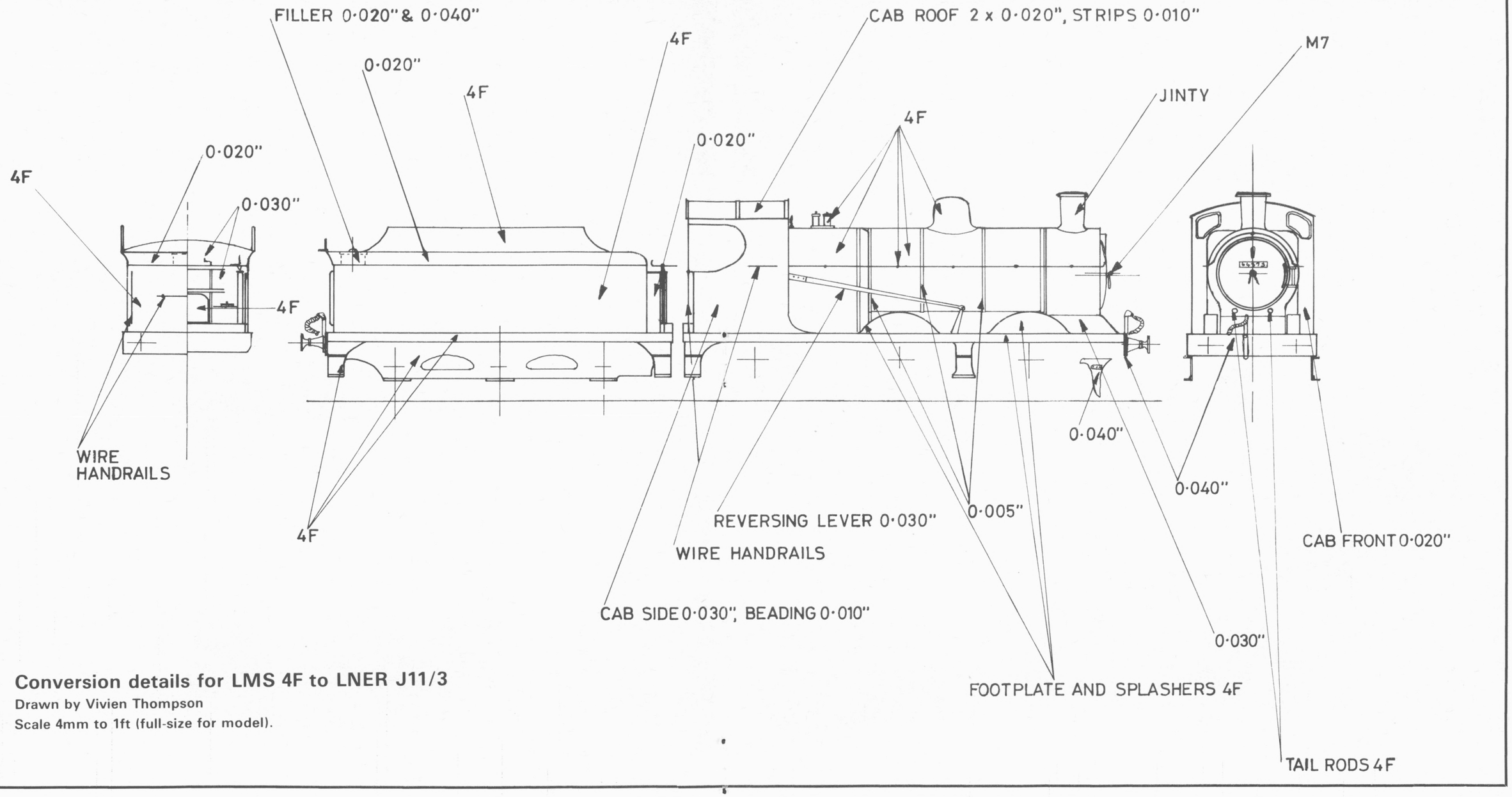
The drawing I worked to was for an original 'Pom-Pom' in the June 1962 *Model Railway News*. The J11/3 had a higher pitched boiler and was more suitable for the conversion than the earlier loco.

Surgery on the 4F loco was slight in comparison with the Class C. The footplate, splashers, most of the firebox, the boiler, smokebox and steps were retained. The smokebox front was treated to a GC look, albeit minus the original opening wheel, and a new smokebox saddle was built up; the tail-rods from the 4F were used, Evostik being the adhesive as the plastic on the 4F buffer beam will not react to solvent. The chimney was cut off and the stump filed down. A Jinty chimney was fitted in its place to try to simulate the LNER flowerpot type, using plenty of Humbrol Body Putty. This latter was also liberally plastered on to the dome to give it a better shape, but the result is none too convincing. The 4F safety valves were put in the correct position, plus the whistle. If you prefer to use castings for these parts a visit to a stockist of such items will no doubt yield suitable pieces for adaptation to suit a J11. A new cab was cut from 0.020in carboned off the drawing. The roof was made from two pieces of 0.020in moulded round a rolling pin; it is worth having two layers for a strong roof. 0.010in strips were added when the roof was set.

Details were put on from various thicknesses of styrene – reversing rod, boiler bands, new buffer beam with cast buffers and 4F vacuum pipe. The 0.040in guard irons were again glued on with Evostik as the lower half of the chassis is impervious to solvent. The 4F handrail knobs were used and once more I had fun (?) bending the wire round the smokebox front. The steps were modified with a craft knife; wire handrails were added as necessary. Like the tender, the loco was given two coats of Humbrol 145 Dirty Black. Methfix BR transfers were applied to cabsides and tender. Mabex waterslide transfers were varnished on to the smokebox numberplate.

As so little had needed modification, the chassis was very smooth running from the start and it was pleasant on Christmas Day to watch it trundling powerfully round Richard's layout on a variety of freight and local passenger workings.

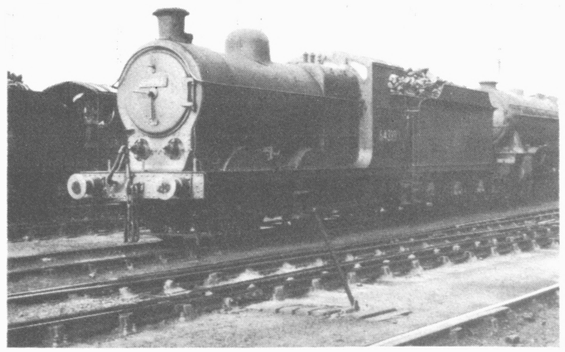
I would like to thank Ken Sinfield for taking such an excellent photograph – he doesn't know what he has let himself in for, not having seen my list of locos to be built!

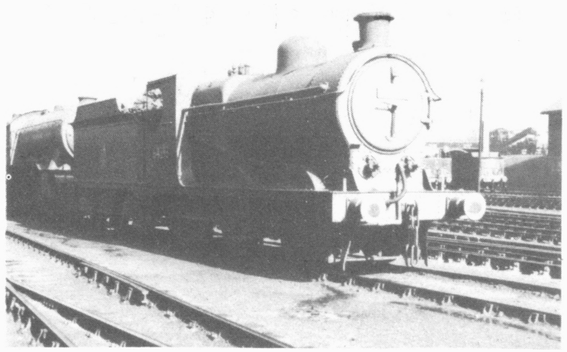


Conversion details for LMS 4F to LNER J11/3

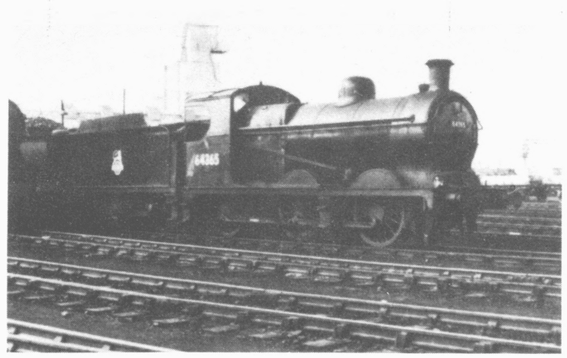
Drawn by Vivien Thompson

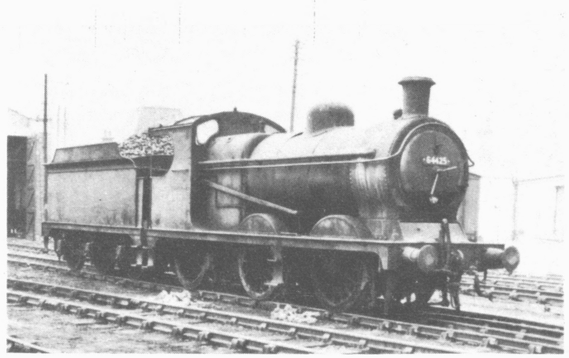
Scale 4mm to 1ft (full-size for model).





These are two views of the same engine no 64393 which is a J11/3 with modified valves and higher pitched boiler. This is the version most easily converted from the Airfix 4F and covered in drawing above. Taken at Mexborough Shed (E. H. Sawford).

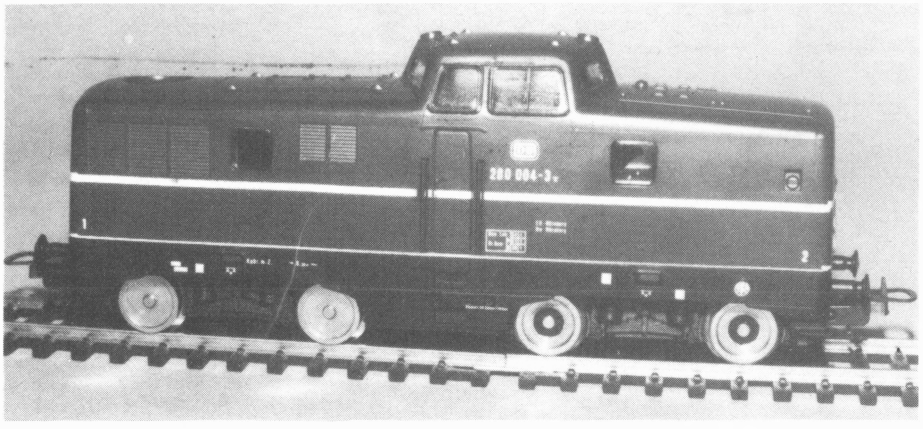




These two photos show engines 64365 and 64425 which are both normal versions of the J11, not the version as modelled in this article. While a conversion to this variant would be possible it entails much more work to lower the boiler. Taken at Darnell Shed and Barnsley Motive Power Depot (E. H. Sawford).

Instant Push-Pull

Class 280 is a distinctive and compact train engine for German push-pull



The model Class 280 as purchased.

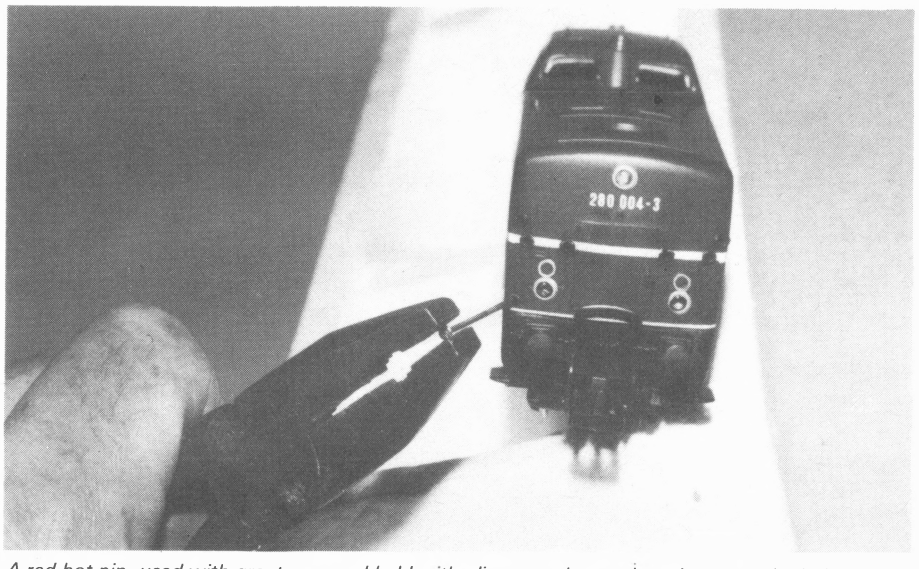
Despite the wealth of German equipment available in various scales, two of the most widely used locos for push-pull service, the Class 141 electric and Class 218 diesel, are not easily available in any range or scale at the time of writing. Classes 38 and 78 for steam traction are no problem (even for gauge 1, though not for gauge 0 as yet). In gauge 0 there is a Rivarossi Class 216 and it should be possible to convert the Rivarossi main line German passenger coaches, to reasonable representations of the early green control car and coach with a little crafty modification.

Most modellers will be interested in N scale or HO scale, however. Classes 212 and 216 can be had in both scales (or can be modified by renumbering – for example the Arnold Class 211 is externally the same as an early production Class 212). But a really distinctive and unusual loco worth looking for in HO is the Class 280 which is made by Lima. It is the only model available of this early post-war diesel loco which became a veteran of the DB loco fleet having entered service in 1952 – then classed as V80. The body style is decidedly 'lumpy' by today's standards, rather like a 1950s motor car. But Lima's model is excellent, with a good finish and acceptable performance, as well as being accurate in detail and dimensions. It is also short, always a valuable asset on a model layout.

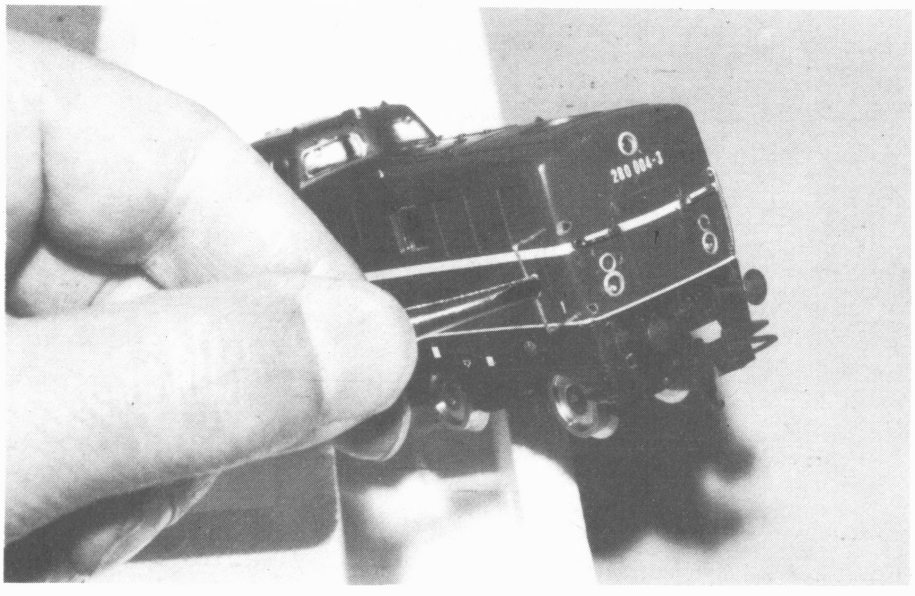
You may not see it around in many shops but it is certainly available, being listed in the current trade catalogue of Burtons, the Lima International distributors in the UK. So retailers certainly ought to be able to obtain it. The model is numbered as a 280 – for the late 1960s onwards – but it would be easy enough to scratch this off and renumber in the V series for the 1950s or early 1960s. If you prefer this earlier period when steam was still in wide use in Germany, the Class 280 is nicely in accord with that era, due to its long years of use. In the later 1970s they were working trains from Bamberg, and in the late 1960s some were at Coburg. Before that, they operated in the Frankfurt area, for example on the Frankfurt-Bad Homburg locals.

The Lima model can be run straight from the box, but it takes only about an evening's work to add just a few extra details and bring the model up into the Roco or Fleischmann class. You can't improve on the excellent finish but you can add a few minor parts which Lima omitted in order to simplify production.

Essentially these are the screen wipers and the distinctive end handrails, plus the usual brake and control pipes on each



A red hot pin, used with great care and held with pliers, can be used to pierce out the holes for the end rails and screen wipers. A Minidrill is even better, but not essential. The hot pin method is not commended for young modellers unless supervised by an adult as there is not only the danger of burning, but you can spoil the model if your hand slips.



Adding the handrails from staples.

Continued overleaf

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Bookshelf

NEW BOOKS FOR MODELLERS.

Steam in Africa *by A.E. Durrant, C.P. Lewis and A.A. Jorgensen. Hamlyn Ltd, Astronaut House, Feltham. Middx. £10.00.*

There seem to be quite a few books around on steam in South Africa but not so many which treat the Continent as a whole. This new book is therefore a welcome addition to those already on the market. Dividing the country up into the North, South, East, West and the Islands, the authors have attempted to give a broad outline of steam from its earliest days to its demise. As such, it is a creditable work. Highly pictorial with both colour and black and white photographs (some of breathtaking grandeur), it has a text that is both readable yet considerably detailed. It cannot of course, provide the complete story, given space limitations. What has been left out are specifications of locomotives, detailed drawings and numberings – information which will be sorely missed by modellers. However, if you are interested in narrow gauge railways of the sort that had to adapt to a variety of different surroundings, then this book is certainly worth keeping an eye open for.

Buck jumper, Gobblers and Clauds *by Jim Hill. Bradford Barton, Trethellan House, St Aubyns Road, Truro, Cornwall. £2.95*

This book is part of a series designed to bring together people's recollections and memories of their careers on the railways. They cover a wide range of experiences anything, for example, from a fireman on the Western Region to footplate work on the Southern. Jim Hill has written about his life spent on the Great Eastern and LNER footplates. Although he does adopt a very simplistic style he still manages to provide fascinating details of what it actually meant to live, dream and work by steam. For example, he describes the difference between a good engine driver who knows his machine and his team and the bad one, who wastes time and effort by a lack of basic understanding of both.

The main criticism of the book is not concerned with the content but with the presentation. The soft, red and green 'linen' cover seems very reminiscent of old-fashioned school text books which usually promised nothing but hours of tedium and boredom. Do not be put off though, by the format for it is certainly worth opening the pages.

Also recently released in the same series are **Ganger Guard and Signalman** by Dick Fawcett (£2.95) and **Panniers and Prairies** by Tony Barfield (£2.95). The former deals with the author's memories of the Settle and Carlisle and includes many amusing incidents and snippets of social history. For example, on one occasion, the station Dick Fawcett was working at was expecting the Royal train. Not only were the station buildings painted but the cottages nearby were provided with new curtains. Some things certainly don't change! The other book deals with the Western Region and all the problems and enjoyment of working on such a line. All in all, if you are looking for light easy reading, any of these books could answer your needs.

The Lobito Railway *by John Scott-Morgan. The North Western Museum of Science and Industry, 97 Grosvenor St, Manchester. 75p, postage extra 25p.*

Readers who have become interested in the Benguela Railway after reading John Scott-Morgan's article in the September issue of *Model Trains*, may want to own a copy of this pamphlet. It runs through the

Continued on page 548

buffer beam. A pleasing 1960s modification, however, was a shade along the top of the cab side windows and this certainly adds interest to the model.

We used Bambi staples for the horizontal handrails at the ends. They are just right and flank the end doors in the centre of the white band. Drill or burn locating holes with the inner holes 2mm from the door edges. A pin point of plastic cement placed in each hole will hold the staple as it is popped into place with tweezers. The vertical end rails on the corners can be made from Rexel No 56 staples – the common type – or wire as desired. The staples are strictly speaking slightly longer than scale, but they are easy to fit. The horizontal rails are painted white to match the band and on most machines the vertical rails are white also. The screen wipers are simply Bambi staples cut in half with pliers and cemented into holes pierced in the top edge of each screen. They are placed a third of the distance in from the outer edge.

The sun shades, if fitted, are simply 17mm lengths of 2mm wide Microstrip (or card) cemented along the top edge of the window frames and centred. Scrape off the paint along the edge first so that the cement holds.

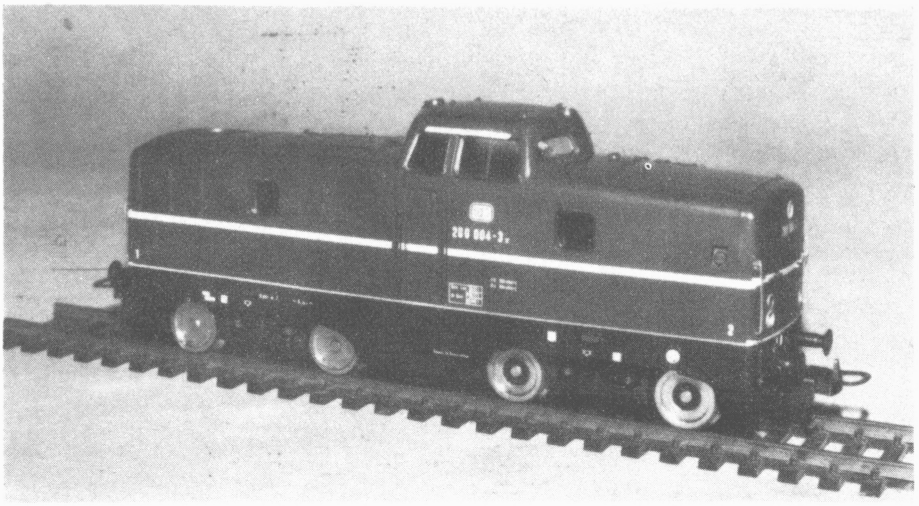
On each buffer beam cut 7mm lengths of black plastic covered bell wire and cement them over the moulded rudimentary representations of the brake/heat/MU pipes on each buffer beam. Use epoxy for this and check (and trim if necessary) that the new pipes don't foul the swing of the coupler. All that now remains is the prominent control pipe which is positioned outboard of the left-hand buffer (viewed head on) at each end of the loco. Use the bell wire again, this time in 18mm lengths bent to a hanging loop shape. The top end glues back into a hole pierced immediately outboard of the buffer shank.

The lower end glues into a hole pierced below the buffer and the loop can be shaped with the fingers or tweezers once the Five Minute Epoxy has set. You may find mould lines on the buffers – if so, rub these down before adding the buffer beam detail.

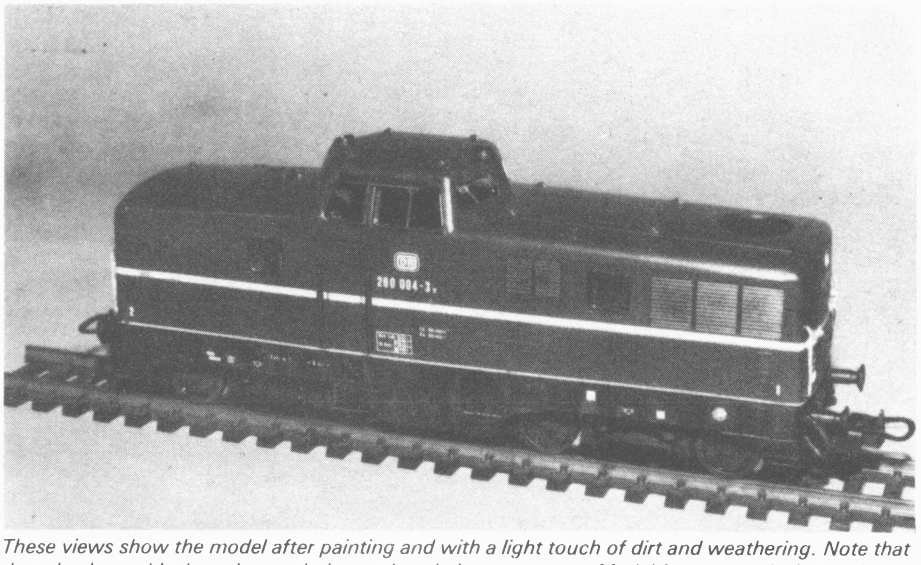
In service, 280s were kept well washed as is usual with DB diesel locos, but the lower skirts and running gear get dirty in every day service, and there are usually sooty deposits around the smoke stacks on the roof. A little light addition of dirt and weathering is therefore in order. Paint the wheels and body securing clips matt black.

In the 1950s the word 'Deutsche Bundesbahn' appeared above the number instead of the DB logo. If you want this lettering (and V numbers) you'll find them in the Spieth range of transfers, available from Howes of Oxford. The small upper light on each nose was not fitted in the 1950s and should be removed if your model depicts this period. The side shades for the cab won't be needed either.

Photos by Chris Ellis



All the extra details are added and the model is ready for touching up the paintwork.



These views show the model after painting and with a light touch of dirt and weathering. Note that the wheels are blackened, greatly improving their appearance. Model is now ready for push-pull work with 'silver fish' or the earlier green 'convert' and suburban cars if used in the 1950s or early 1960s period.

Model Summary
Principal Deutsche Bundesbahn locos for push-pull working

Class	N	HO	O	1
Diesel				
212	Fleischmann	Märklin Fleischmann		Märklin
280		Lima		
216	Märklin	Märklin	Rivarossi	
220		Märklin		
218	Arnold(2)			
118	Piko	Piko		
Steam				
78	Arnold Fleischmann	Lilliput		Märklin
38	Fleischmann(3)	Lilliput(3) Fleischmann(3) Märklin(3)		Märklin(3)
Electric				
111	Märklin(1)	Arnold	Roco Märklin	
141		Arnold		

Notes
(1) – Available in a set (8101) with 'silver fish' train or separately in Z gauge not N.
(2) – Red/grey version wrongly numbered as a 217
(3) – Only Lilliput offer the correct version with 'water tub' tender for push-pull work – others would need converting.

Hurstpierpoint *demonstrates the 1939 period Malachite Green livery with green smoke deflectors and yellow/black lining. Note the large Bulleid chimney with fabricated lip added to improve appearance. On this loco the injector pipes appear to be painted green (P. Ransome-Wallis).*

Some extra items for the Hornby model, by Chris Ellis

of just adding a favourite name and number to the Hornby model for you are more likely than ever with this one to make a howler.

If you want to see the immense variety possible (and avoid choosing the wrong name/number combination) there are two good reference books worth looking at. One is Brian Haresnape's *Maunsell Locomotives* and the other is S. C. Townroe's *The Arthurs, Nelsons and Schools of the Southern* both published by Ian Allan. Many other books and magazines have pictures and passing references and, no doubt, there have been monographs on the class, though I have not yet found one. What is clear, however, is that with the colour scheme supplied by Hornby you are restricted to depicting very few locomotives without at least a repaint of the model.

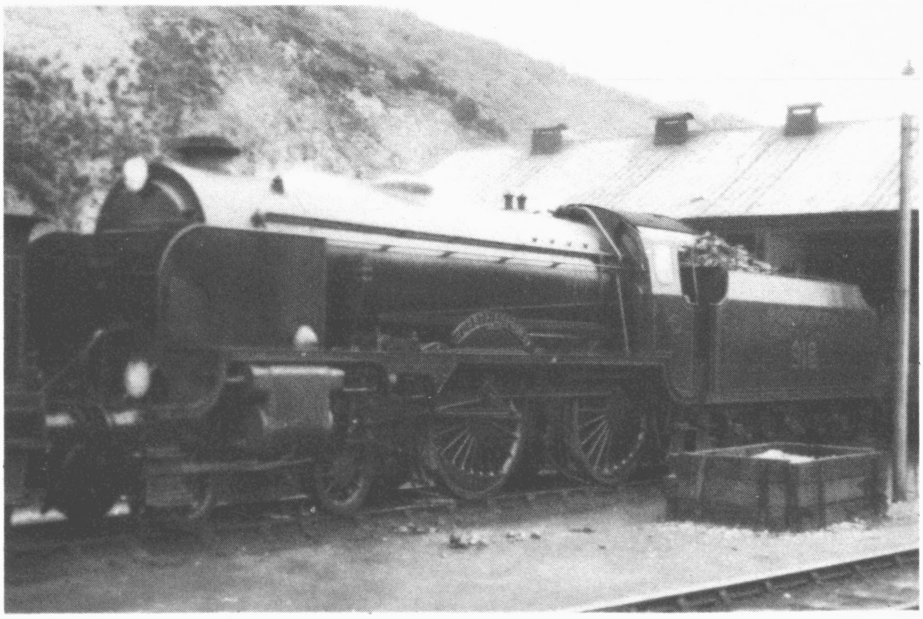
The actual *Stowe* as preserved on the Bluebell Railway, and recently restored to service, is not in the same colour scheme as the Hornby model. The real *Stowe* is in the Olive Green livery and marking style of the Maunsell era and if you want this there is no option but a complete repaint. This can be done using the available Gloy or Humbrol SR Olive Green paints and the lettering and lining transfers from the Kingprint of PC ranges. However, this amount of lining and painting will take a fair amount of skill if you are to get a finish as good as that provided by Hornby, and I, for one, can lay no great claim to doing this successfully, certainly when it comes to lining out. Therefore the alternative is the one provided by Hornby which is actually the colour scheme that took the SR into the Malachite Green era in 1938.

The 'Schools' in miniature

My earliest train watching memories are mostly of Southern locos in the years immediately before nationalisation, for I lived in the middle of SR territory. So studying Hornby's Malachite Green 'Schools' model at eye level recalled happy days at the ends of platforms looking at the real thing and the excitement on one occasion of being helped up to the footplate by a friendly 'Schools' fireman for a look around the cab . . .

But enough of the nostalgic stuff. Let's consider the Hornby model and see how the Southern enthusiast can get the best out of it. As it comes the model measures up well in overall dimensions and all the fittings are correct. There are only minor omissions (such as lamp irons on the footplate front and sandbox filler caps) and these are not immediately obvious. Below the footplate the sandboxes are missing, as are the pipes. the front brakes, brake rigging, and the miniature splashers over the rear pair of bogie wheels. By previous Hornby standards, however, the chassis detailing is still very well done and what is there is correctly modelled. A great step forward is the sprung drawbar which is simple when compared to those on recent Roco and Lilliput models but is, nonetheless, very effective. Early experience with this model, however, suggests that it is a good idea to check the coupling at the end of a running session to make sure the wire loop spring is still actually in place. It worked loose and dropped off in early test runs with the sample model and a search of the track was necessary to find it. To be fair it has not worked loose again since it was put back and firmly secured, but it is a very small piece of wire which could easily be lost if it comes adrift and is not noticed. The idea is excellent, though, and most effective and it would be nice if earlier models were modified the same way – and, indeed, if other makers come up with similar ideas, for the yawning gap between loco and tender is the major visual blemish of most otherwise excellent ready-to-run locomotive models.

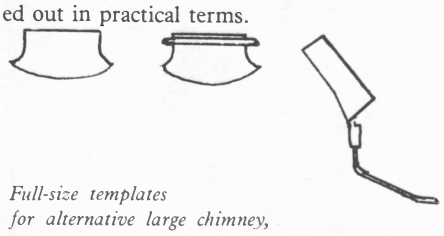
Given that it is a very sound model, there is little extra to do in the way of adding extra detail and the photos here show how it's done. Quite basic stuff, actually, but it enhances an already good model. Of course, given that there were 40 locos in the class in service over a period of more than 30 years there are many livery and detail variations possible, but as always it is not merely a case



Hurstpierpoint *in pre-1938 Olive Green finish showing number on tender and brass number plate on cab side. The original chimney is fitted and there are dirty runs on boiler and firebox side and weathering at the front end. Smoke deflectors were plain black in this original colour scheme.*

Hornby have obviously done this to keep the 'Schools' model in period with the 'Battle of Britain' model.

Hornby's *Stowe* is depicted as one of the first seven 'Schools' locos repainted into Malachite Green (or slight variations of bright green shades) when Bulleid took over as the SR's CME in 1938 and started to give the Southern a new 'house style' of brighter, friendlier colours, and the modern 'sunshine' lettering to match. In fact, this style seems to have stood the test of time for it still looks sharp and pleasing forty years on when seen on preserved locos and stock – at least to my eyes. A picture of *Stowe* in 1938, finished as depicted by Hornby, can be seen in the Townroe book. What happened was that a number of locos and sets of coaches were painted in the proposed new style both to test public reaction (which was very favourable) and to see how the scheme worked out in practical terms.

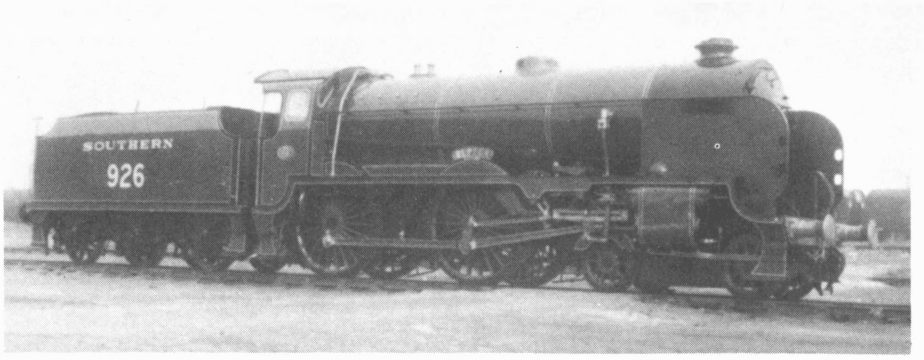


Full-size templates for alternative large chimney, large chimney with added lip, and main sandbox.

Black and white lining was used on the early Malachite Green finish, as on the Hornby *Stowe*, this being taken direct from the old Olive Green scheme. When the new Malachite Green livery was standardised in 1939 the lining was changed to black and yellow and, in addition, smoke deflectors on all engines so fitted were also painted green and lined out, whereas smoke deflectors remained black on the early trial scheme locomotives. No doubt there were plenty of exceptions to this general rule, but it certainly limits changing the identity of *Stowe* to another loco if you wish to retain the Hornby paint scheme unaltered. I've not been able to find the identity of all the other 'Schools' locos so painted, but *Eastbourne* (914) certainly was for it is illustrated in the 1938 scheme in Brian Haresnape's book, exactly similar to *Stowe* except that the number and 'Southern' legend are about 3 inches lower in position. The injector pipe appears to be in polished copper on this loco but it is painted black or green on most locos.

If you wanted a loco in the standardised finish you would need to paint and line out the smoke deflectors, then go over all the lining on the model replacing the white with yellow – not impossible if, for instance, you used the very fine chrome yellow lining from the Kemco range. This has no carrier film and fits well into difficult shapes and recesses. It would take time but be quite feasible. In the immediate post-war period *Stowe* was given a repaint in Malachite Green. I have not managed to unearth a picture, but it seems likely that yellow lining and lined smoke deflectors would have then appeared even on *Stowe*.

Mention of *Eastbourne* leads us to the physical changes. For a start locos 900-909 had slightly different cab window shape and position – a little lower, in fact. So if you wished to depict any of these you would need to find a scale drawing (such as the Roche one) and make new cab sides from

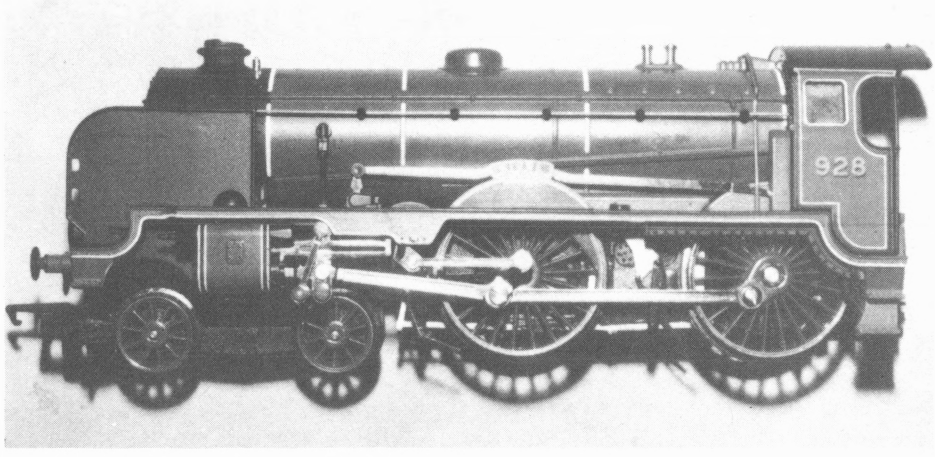


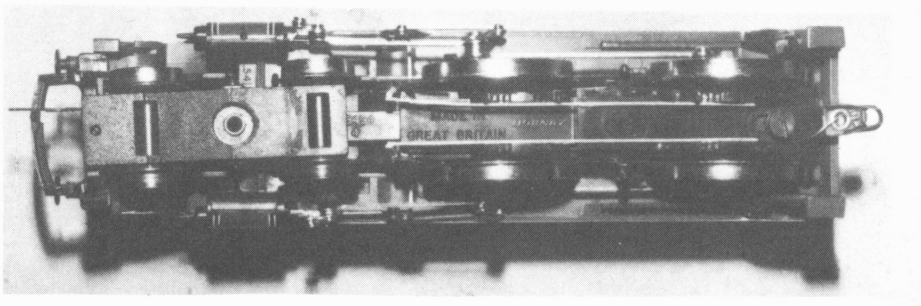
Repton *in the pre-1938 standard colour scheme of Olive Green. The lined out splasher over the rear pair of bogie wheels shows up well in this low angle view. The injectors, injector pipes, and safety valves are polished and black/white lining is applied. Note the power rating 'A' at the extreme front end of the footplate valencing, an interesting addition to the model if you can find a small enough white A. But do not be fooled by this picture – it shows the loco as now preserved, not as it was, and the snifting valves each side of the chimney are missing so do not take this as a definitive view for historical accuracy!*

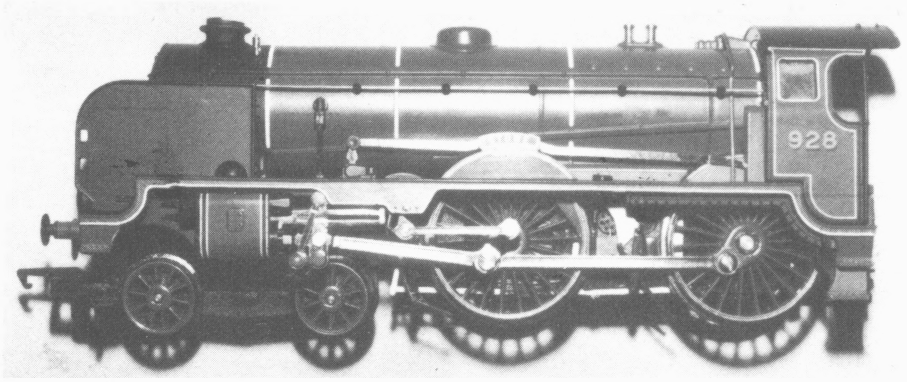
plastic card. The spectacle plate was slightly different, too, lacking the shields above the windows. *Eastbourne* and about half the other members of the class were fitted from 1938 with Lemaitre multiple jet blast pipes by Bulleid, necessitating a wide chimney of rather ugly aspect. Initially this was a plain sided fitting, but a fabricated lip was later added to improve the appearance. In the 1938 finish *Eastbourne* had the plain large chimney, so this would be a necessary modification if you wished to switch identities on the Hornby model as it comes (aside from that the number will need changing, of course). It certainly won't be difficult to change chimneys, though as I prefer the original elegant Maunsell chimney I stayed with *Stowe*. Your scrap box probably has a ball pen top or some other plastic tube of the necessary diameter. Just measure it off on the sketch, cut away the Hornby chimney and replace. For the later lipped variety a piece of fine Microstrip glued round the edge should suffice. *Epsom* (937) is shown in similar style in Brian Haresnape's book, plain large chimney, but with the 1939 finish with green smoke deflectors and (probably) yellow/black lining.

The lesson from all this is obvious – if you have a favourite 'Schools' loco it is essential to find an illustration of the real thing at your chosen period and check it both for colour scheme and fittings. A good example of a variation is *Blundells* (932) which had the tender sides extended in 1938. This will be a simple enough alteration with plastic card and there is a good picture of the tender in the Haresnape book. But you would have to look elsewhere for an overall picture of the loco to check its colour scheme and any other detail changes. In BR days the colour schemes changed again. There is a splendid 1948 variation of *Repton* shown in Brian Haresnape's book which could be easily

This view shows the sandbox, sand pipes, brake rigging and added front brakes, all as described in the text. The underneath view shows how the brake rigging is cemented inside the moulded springs.







Close view of model shows how the extra chassis detail enhances appearance. Note in particular, the extra lower front step added to the bogie side and painted green, and the light weathering which also tones down the white lining. Handrails, reversing lever, safety valves and snifting valves are all painted over.

done on the basic Malachite Green loco (see it for yourself). But when the standard schemes were finalised 'Schools' locos went into lined black (causing consternation at the time I recall), but were later more rightfully given back their 'principal' status with lined BR green livery. Of course, it may be in time that Hornby will do the honours with a BR livery version, but until that happens you will need to repaint and mark the models yourself. See Richard Gardner's article in the June 1981 issue for the full procedure to follow when repainting to BR lined black. In BR days the snifting valves were removed from each side of the chimney and replaced with circular blanking-off plates, so this is another model modification necessary for a BR version – though some engines had these valves quite well into the BR era.

Whichever colour scheme and detail variation you choose, nearly all nameplates and number plates are available in the Kings Cross range at £1.04 a set (post extra, from Model Railway (Mfg) Co, 14 York Way, London N1). The exceptions are 910, 918, 920, 921, 926, 930, and 937. The chassis details shown in the model pictures are applicable to any variation and these are summarised as follows:

(1) The front steps are truncated to allow the bogie to swing. It is difficult to add the missing step, but I cut the lower step from the cab steps of an Airfix 'Pug' kit, previously cannibalised for spares, and when these are glued (with Epoxy) to the sides of the guard irons on the bogie quite an acceptable optical illusion of full depth steps is achieved. Of course, the new lower step swings with the bogie, but on the real engine there is a visual break on this step where the cylinder drain pipes pass over it, so even the little gap at this point looks quite reasonable. If you want to fiddle with some fuse wire and glue it to the top of the step you could also simulate the cylinder drain pipes, but it would be easy to foul the wheels doing this so I omitted them.

(2) From the 'Pug' chassis sides cut off the rear set of brake blocks and hangers and use Epoxy to glue them on the bottom corners of the Hornby chassis block. This puts them in just the right position for the front brakes, but take care not to foul the wheel rims. The 'Pug' brakes are quite similar in appearance to the 'Schools' front brakes.

(3) Cut out the main sandbox shapes from 30 thou plastic card, using the sketch as a template. Glue in position between the main wheels. The sandbox is too thin to foul the rods. Actually it should be much thicker for scale, but the effect is achieved without affecting the running gear. The front sandboxes were almost completely hidden behind the valencing and valve gear brackets on the real loco so I did not bother with front boxes.

(4) Similarly there was a small splasher over the rear set of bogie wheels. It would be possible to fashion this from plastic card and glue it to the bogie bolster, but it would be a fiddling job and might well foul the wheels or frame. As it is barely visible except from low angle even on the real loco I omitted this.

(5) Add dummy brake rigging. This was done very simply by cutting lengths of 1mm Microstrip and glueing them along the lower edges of the chassis behind the springs and projecting forward of the front brakes. Then a 5mm long length was cut and cemented at an angle from the end of each horizontal arm to just behind the front brake block. This is somewhat simplified but looks right and is very easy to do.

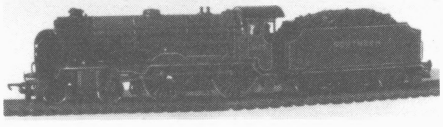
(6) Finally, cut 20mm (front) and 16mm (rear) lengths of Microrod of the finest size. These make the sand pipes and are cemented on the chassis side in the case of the front pair, and below the sandboxes for the rear pair, being bent to shape before fitting. Ensure all these additions clear the rails and running gear before cementing.

(7) Cut two 2mm discs of scrap plastic and cement these above the footplate between the splashers to depict the main sandbox fillers.

(8) Measure and cut glazing and cement inside the side window apertures and inside the spectacle plate as well, if you like, though absence of glazing in the spectacle plate is hardly noticed from normal viewpoints.

(9)You could if desired cut small lengths of staple and cement these into holes drilled above the footplate at the buffer beam end to depict the front lamp irons. Those on the smokebox are already provided as also are those on the tender rear. An attractive addition would be a couple of route discs from office punchings of white paper glued in the desired positions on the lamp irons, giving a typical Southern touch. I have not done this yet. A duty number was often stuck on to the lower disc.

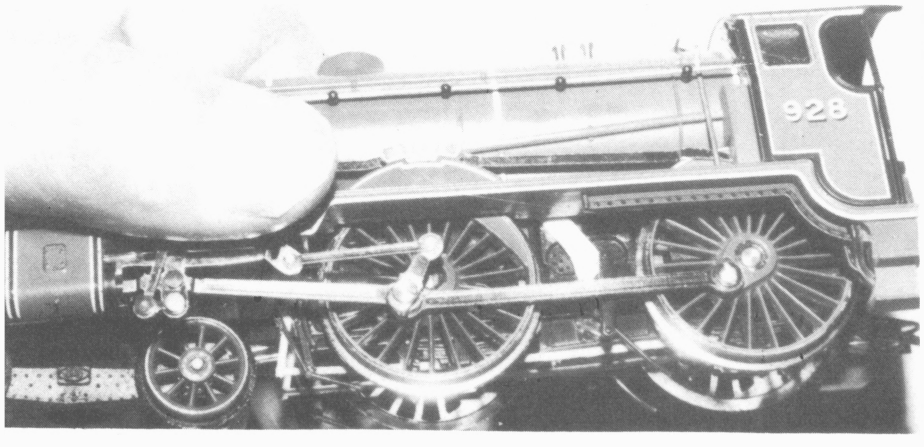
(10) Lastly glue the usual crushed coal over the tender coal moulding, paint and fit the crew supplied (cut off the driver's right knee and foot for the correct positional fit on the 'Schools'), add the brake pipes supplied, and use guitar string or purchased items for the heat pipes which locate below the buffer beam on the opposite side to the brake pipe at each end.



Completed model with light weathering added.

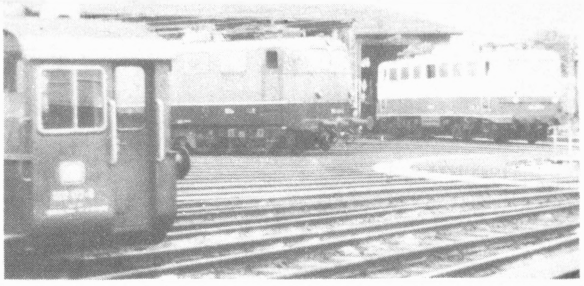
One very noticeable point about the Malachite Green livery – and maybe that is why Bulleid thought of it – is how well it shows through even quite a heavy layer of dirt and weathering. I added a little dirt to the model, making it less than pristine but about as typically weathered as I recall seeing them. First I painted all the handrails to match the adjacent colouring. Next I added a disc to the reversing lever crank to make it look articulated and not just a metal pressing, and then this was painted Malachite Green too (using the Gloy shade), as were the safety valves. The snifting valves are black, as are all axle ends and wheel tyres. Having done this I mixed a watery blob of 'underframe dirt' and painted all over the wheels and motion and chassis sides so that the green, etc, still showed through. Then a watery mix of acrylic sooty black was painted over the boiler top, cab top and tender sides, some of it being rubbed off again before it set. The most important thing is to tone down the white lining, notably on the boiler bands, as it is far too stark and fresh. An alternative as far as the boiler bands is concerned is to paint out the plain white ones provided by Hornby and substitute the correct white/black/white lining from a transfer sheet.

The model with all the changes described in the text. Note step from Airfix Pug is glued on the bogie guard iron. Painting has still to be done.



Say it in German!

A glossary of German railway terms and abbreviations, with modellers in mind compiled by Steve Rabone



No, we are not trying to teach you to speak German, but if you build or operate German railway models, study German model catalogues, or look at German railway books, you'll see all the following terms cropping up again and again. So this handy list should help out, but there are, of course, many more railway terms in the German language.

Passenger trains

Personenzug: The old classification of local stopping train. This is no longer used in West Germany.
Nahverkehrzug: Fast local train. This is present day classification given to all West German local trains.
Eilzug (E zug): Semi-fast train calling at all main intermediate stations. Often operate over very long distances.
D zug: Literally *Durchgangszug* or corridor train. Generally referred to as *Schnellzug.* Long distance express trains stopping only at the principal stations and junctions, and having a supplementary fare. The D trains have declined in importance with the introduction of the IC category of train.

Above: *On the left is a fast local train (Nahverkehrzug) hauled by a veteran Class 118 (BR 118) locomotive. On the right is another veteran type, Class 432 (BR 432) originally ET 32 indicating an electric multiple unit. Station has a built-up platform (Bahnsteig).*
Right: *Code B in the type designation Byg 514, beneath the vehicle number, indicates a 2nd class coach as confirmed by the number at the entrance door.*

IC zug: Inter-City trains. The title was borrowed from British Rail upon the introduction of the new interval services, initially of first class only trains and then from 1979 two class trains. These trains now operate on an hourly basis on the principal main lines within Germany and some run out of Germany into surrounding countries. They have a supplementary fare.
F zug: *Fernschnellzug.* Former long distance first class only trains phased out on introduction of the IC trains.
TEE: *Trans Europa Express.* A small number of these first class only trains run, some totally within Germany. Their numbers have declined with the introduction of the IC trains.
DC zug: These were a short term phenomenon, being upgraded D trains connecting with the original first class only IC network.
Messe Schnellzug: Trains run in connection with the large trade fairs held principally at Hannover. First class only.
S-bahn: *Schnellbahnzug.* Suburban trains run in the large cities at Hamburg, Frankfurt, Stuttgart, Munchen and in the Ruhr area.
Autoreisezug: Motorail train.

Freight trains

Dg: *Durchgangsguterzug.* Long distance through freight train running between principal marshalling yards.
Gdg: *Ganzdurchgangsguterzug.* Block freight train carrying only one type of load.
Gmp: *Guterzug mit Personenbeforderung.* A mixed passenger and freight train still found on a few state run branch lines and on many private lines.
Ng: *Nahguterzug.* Local goods train.

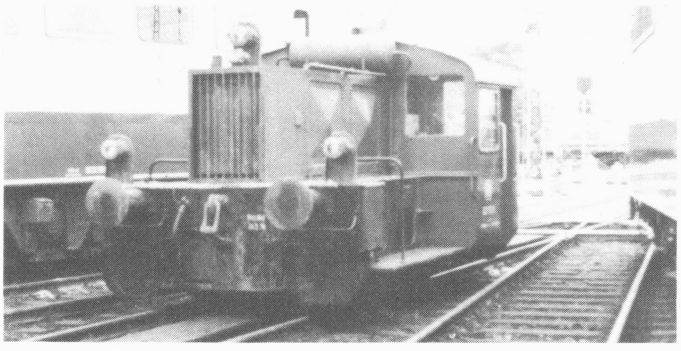
Coaching stock

Coaching stock codes
A: First class.
B: Second class.
A/B: First/second class combined; composite coach.
D (Gepackwagen): Baggage or Mail Van.
BD: Combined second class and luggage van (many with push-pull control cab – *Steuerwagen*).
WR (Speisewagen): Restaurant or Buffet car.
WL (Schlafwagen): Sleeping car.
VT: Multiple unit powered vehicle-diesel.
ET: Multiple unit powered vehicle-electric.
ETA: Multiple unit powered vehicle-battery electric.
VS: Multiple unit driving trailer car-diesel.
VB: Multiple unit centre trailer-diesel (Beiwagen).
ES: Multiple unit driving trailer car-electric.
EB: Multiple unit centre trailer-electric.
ESA: Multiple unit driving trailer-battery electric.
Liegewagen: Couchette coach (2nd class only).

Locomotive stock

V: (before loco number), diesel locomotive. Obsolete designation.
E: (before loco number), electric locomotive. Obsolete designation.
Kriegslok: Wartime austerity locomotive – principally Classes 42 and 52.
Baureihe (BR): Class of locomotive.

Kleinlok (Kof): Small four-wheeled diesel shunting locomotive, used principally for wayside station goods yard shunting and trip workings. Also found in loco yards.
Triebwagen: Multiple unit train.
Schienenbus: Four wheeled railbus.
Einheitslok: Standard locomotive. Used principally when talking about the standard Deutsche Reichsbahn locomotives built in the 1930s, such as BR 80 (Class 80).
Tenderlokomotiven: Tank locomotives.
Schlepptenderlok: Tender locomotives.



This is a Kleinlok or Kof, the very small type of four-wheel diesel shunter widely used in yards and loco depots. This one is of Class 322 (BR 322).

Railway companies and organisations

DB: Deutsche Bundesbahn (West Germany).
DR: Deutsche Reichsbahn (East Germany).
DRG/DRB: Deutsche Reichsbahn Gesellschaft (pre-war German State Railways).
DSG: German Restaurant and Sleeping Car Company.
Mitropa: Pre-war equivalent of the DSG, now found only in East Germany.
UIC: Union of International Railway Companies. A body that co-ordinates the running of the railways of Europe.
RIC: Standard European number scheme operated by the UIC for carriages.
RIV: As RIC but a number scheme for wagons. Marked on vehicles.

A typical imposing main station (Hauptbahnhof – Hpf), in this case Nürnberg Hpf, seen from the tram terminal adjacent to the main entrance.

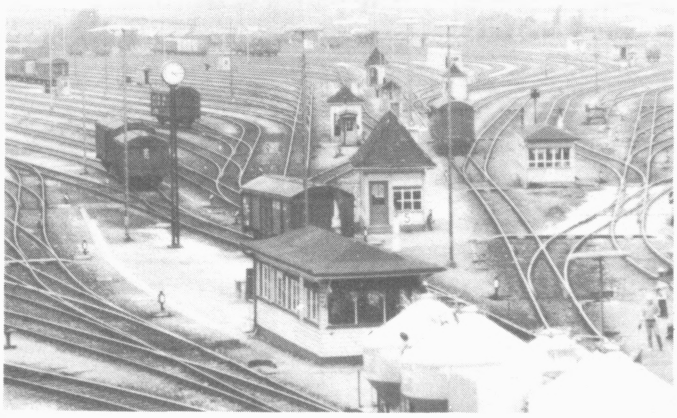
General railway terms

Abzweigstelle: Junction.
Abstellbahnhof: Carriage sidings.
Ausgang: Way out of station (Passenger exit).
Ausweiche: Passing loop.
AW: *Ausbesserungswerk.* Repair works.
BD: *Bahn direktionen.* Railway operating region.
Bahnhof (Bf): Station.
Bahnsteig: The actual structure of a platform.
Bw: *Bahnbetriebswerk.* Locomotive running shed.
Bww: Carriage depot.

In stations reference is made to the track (Gleis) from which a train departs rather than the platform. In rail yards, tracks are similarly identified as can be seen from these signs – Gleis 11 and Gleis 12 – on the buffer stops.

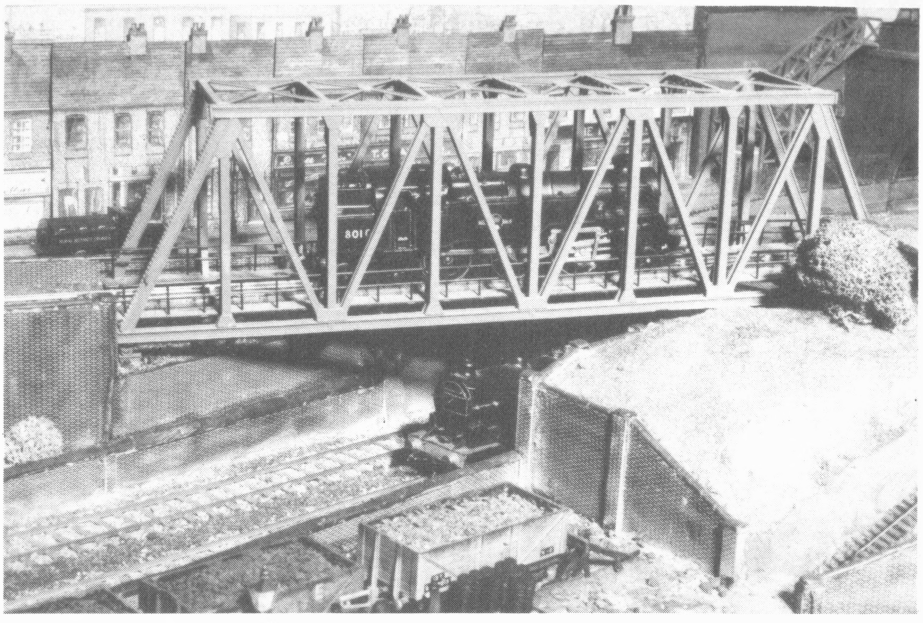
Gleis: The track on either side of platform. The equivalent of British platform.
Gbf: Gutebahnhof. Goods loading station.
Formsignal: Semaphore signal.
Hbf: *Hauptbahnhof.* Principal railway station in a town or city.
Hauptsignal (Hp): Roughly the equivalent of the British Home signal.
Indusi: The German equivalent of AWS (Automatic Warning Signal).
Lokallbahn: A branch line operated by the local district, built to light railway standards.
Lichtsignal: Colour light signal.
Lokschuppen: Locomotive shed building (used when referring to a small shed).
Kleinbahn: A privately built railway built to light railway standards during the period when the Prussian state were encouraging branch lines. Can be to 60/75cm, 1 metre, or standard gauge.
Kreisbahn: A light railway usually standard gauge but could be 75cm or metre gauge. Operated by the *Kreis* or local authority. Max speed 30 kph.
Kurswagen: Through carriage working.
Nebenbahn: A branch line built to normal track standards and often part of the state system. Usually standard gauge except in Baden-Wurttemburg where often 75cm gauge. Speed limit of 40/50 kph.
Normalspurbahn: Standard gauge railway.
Oberleitung: Overhead electric catenary.
Rangierbahnhof (Rbf): Marshalling yard.
Rundschuppen: Roundhouse shed.
Schmallspurbahn: Narrow gauge railway.
Sonderzug: Special train.
Strecke: Railway line.
Stellwerk (Stw): Signalbox.
Weiche: Point (track).
Vorsignal: Distant signal.
Zahnradbahn: Rack railway.

Marshalling yard (Rangierbanhhof – Rbf) of the largest size at Nürnberg. Here you might also find a shunting locomotive (Rangierlok).



West Road

Colin Catley describes his 4 mm scale layout



This is the heavy girder bridge which forms an interesting visual break in the middle of the layout. Note the typical Northern backscene, including low relief houses.

Like so many modellers of my generation, I was introduced to the hobby by acquiring a Hornby Dublo three-rail system as a schoolboy in the 1950s. Later, having settled down to married life, it was not long before I became interested in the subject again, but by now the more authentic two-rail systems were in fashion, with plastic taking over from tinplate, to my mind a great improvement so I decided to make a completely new start.

A reasonable layout was built up over a period of several years but running was not too good as the point work used catered for all types of wheels, from the rather coarse types still then fitted to some ready-to-run stock through to fine scale wheels supplied with some kits. The layout was persevered with, however, and transferred to our present home in 1974, several months being spent making modifications to fit it into the new environment – but then came the great breakthrough – I joined the Hemel Hempstead Model Railway Society and subsequently the Kirkton Group which enabled me to discover how things should be done!

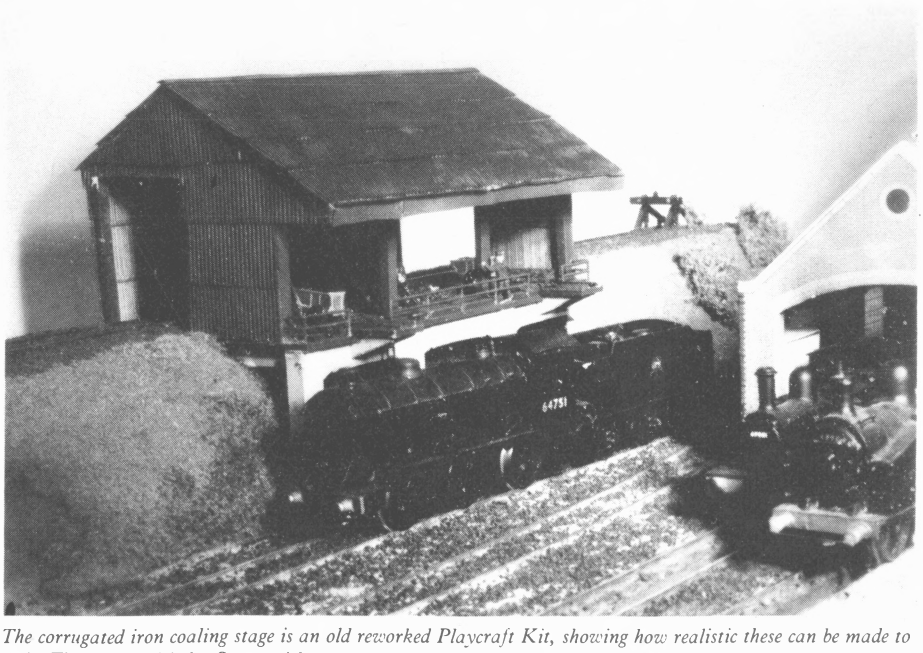
Having learned the art of constructing easily transportable baseboards, and the advantages of hand built track, it gradually became apparent that I would not achieve the degree of realism and trouble-free running which I had now become used to without starting again from scratch.

The decision to scrap my existing layout was a hard one to make as many long hours had been put into building it, but having seen what could be achieved, I realised that it had to be done.

The layout was stripped, except for one run of about 12 ft to be used for testing purposes, while the new layout was under construction. I then set about fully insulating and boarding the loft area as the vast temperature changes previously experienced, had hardly helped to improve running standards. Having completed this work, including the addition of a radiator, it was then time to start planning the new layout, thus the 'West Road Story' began early in 1979.

Unlike previous layouts which had tended to evolve in a somewhat haphazard fashion, guide lines were laid down for the construction and running of West Road from the start; one of the most important of these was the drawing out of a full-size track plan on a roll of wallpaper as this showed quite conclusively, that what would apparently fit with ease into 8 ft when sketched out on the back of the proverbial cigarette packet, in practice required a space of nearer 14 ft!

During a discussion with fellow members of the Kirkton Group after a visit to the Solihull show, the plans were thoroughly chewed over, resulting in some trackwork improvements being suggested, which were then incorporated into the full scale plan. At last baseboard work could commence.



The corrugated iron coaling stage is an old reworked Playcraft Kit, showing how realistic these can be made to look. The loco shed is by Superquick.

The Layout

It was decided to model a general rather than specific branch terminus, set in the 1950s period, as this would allow for the use of a variety of buildings from various origins as well as a mixture of commercially available bits and pieces. In any case, as a first attempt in scale modelling it was considered safer to do this as it would give the 'rivet counters' less scope! Although the buildings and accessories represent a number of different railway origins the locomotive stock is predominantly ex LNER in BR livery.

The station consists of one single and one island platform with a carriage/pilot siding adjacent to the single platform. One face of the island and the single platform serve the main lines which curve on leaving the station, prior to negotiating a double cross-over and subsequently falling on a ruling gradient of 1 in 50 to enter a six track fiddle yard. The outer face of the island receives freight and parcels traffic, which is then shunted into coal sidings, goods shed, cattle dock or the sleeper works, adjacent to the station.

On the opposite side of the station the loco spur branches away from the carriage/pilot siding and after reversal, locos climb up the bank over the main line to gain access to the loco depot which is situated over the fiddle yard. The depot has coaling facilities, an ash pit, turntable and a two road engine shed; each road having an inspection pit, and the whole area having been laid out so that each function may be by-passed if required, ie, a loco may pass directly on to the turntable without coaling or if neither of these services is needed, they may both be by-passed with the loco making straight for the shed, after reversal in the yard.

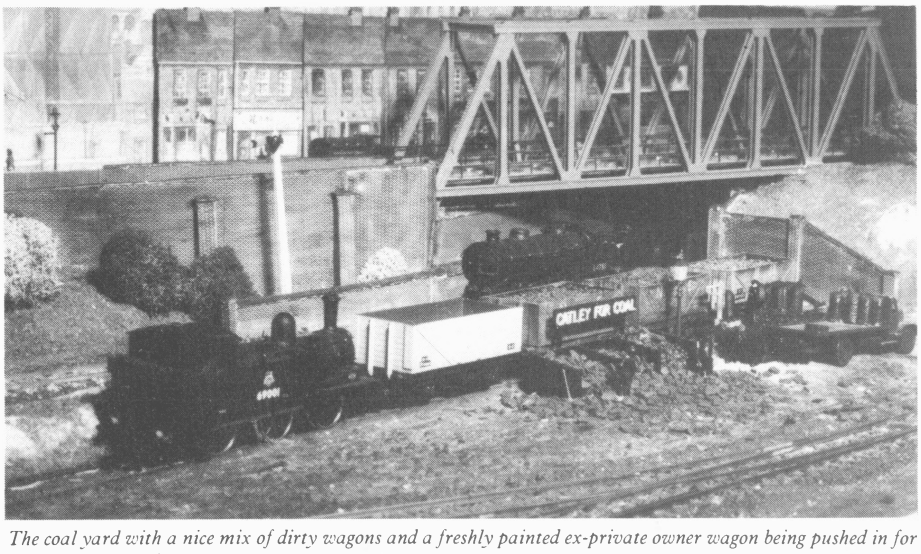
Baseboards

The overall size of the layout is 18ft × 2ft, comprising four boards each 4ft × 2ft with an end board 2ft × 1ft which houses the turntable. The first three boards were constructed using a ½in chipboard top screwed

and glued on to a 2in × 1in planed timber framework, with folding legs secured to the top with flap hinges. A diagonal brace was fitted between the top and each pair of legs again, via flap hinges, the pin in one hinge being removable to enable the brace to be folded back for transportation. The station board is fitted with two pairs of legs while all others have one pair.

The fiddle yard board is of open topped construction with the fiddle base being retained by a lip at the front, to ensure the smooth transfer of trains from the yard on to the main line without the jolting sometimes experienced when temperature variation causes an unacceptable height difference at this point. A ¼ in bushed bolt was used for pivoting the fiddle base through an arc so that each of the six fiddle yard tracks may feed both main line tracks.

A separate ½in chipboard top size 4ft × 1ft was used for the loco depot with its own 2in × 2in frame being secured to the fiddle yard frame with vertical 2in × 2in members some 6in high. Finally, the turntable board was constructed along similar lines to the other four with the turntable being easily removable if required for maintenance or repair. To enable one person to erect the layout, ledges were fitted to one side of each join so that after the first board was erected, the second unit could be rested on the ledge mounted on the first, thus freeing both hands for bolting together, without having to take the weight of the board.



The coal yard with a nice mix of dirty wagons and a freshly painted ex-private owner wagon being pushed in for unloading by the J72.

For transportation, chipboard ends were fitted to the baseboards to form two twin base board packages which along with the turntable board and two control panels, may be fitted into two average estate cars.

Trackwork

Once the baseboards were completed and assembled, they were covered in 3/16 in cardboard, used to deaden sound and readily available from a local firm. This was followed by glueing the track plan into position with 2in wide strips of ⅛ in cardboard being glued in position on the track contours.

All trackwork, with the exception of that in the fiddle yard, which was resurrected from previously used yard lengths, has been handbuilt using Code 95 bullhead rail, soldered on to copper clad Paxolin sleepers to fine scale standards. The track was made in 18in lengths using a home made jig which works as follows:

Sleepers are loaded into the jig and held at the correct pitch by spacing pieces glued to the jig base. A strip of wood is screwed into position above the sleepers to hold them securely in position before an 18in length of rail is clamped against the side of the wood using spring clips. After soldering the sleepers to the rail, the resulting half section of track is removed from the jig and carefully aligned against the track plan before being secured with drawing pins. A second length of track is then soldered in place using a track gauge to ensure correct track spacing.

With most paxolin sleepers it is necessary to cut a gap in the copper to avoid shorting and I always make two cuts about ⅛in apart before removing the section in between – bitter experience has shown that with a single saw cut, it is very easy to leave a slight burr behind through which shorting can occur.

Point work is of a 5ft minimum radius on the main line with a minimum radius of 3ft being used in sidings and the loco depot. Construction was achieved by fixing sleepers down to a wooden board with double sided tape and then soldering the two outer or stock rails into position having first filed out the recesses for the blades. Live pattern frogs were then made and fixed in position, carefully gauging against each stock rail, before completing, by the addition of the blades and check rails. All trackwork was then thoroughly scrubbed to remove all traces of flux before painting with precision track colour and glueing into position.

After completion of the electrics, the track work was ballasted using real granite chips brushed into position between the sleepers and secured with a mixture of water and wood glue applied with an eye dropper. When totally dry the whole system was air brushed to ensure a non uniform appearance with areas such as station departure points and sidings being given the 'dirty' treatment.

Buildings and structures

It is proposed that all buildings will eventually be made from scratch to give a more individualistic appearance to the layout but having spent several weeks constructing a model of the old Midland railway station buildings at Matlock, it was decided that in order to get the layout into an acceptable running condition within a reasonable time, other buildings would initially be made from kits and subsequently replaced as time allowed.

The signal box, goods shed and loco shed are by Super Quick, the sleeper depot by Bilteezi and the coaling stage by Playcraft. In most cases added details such as layered roofing tiles having been incorporated.

The overhead crane in the sleeper yard was entirely scratch-built, the only standard parts being the crane buffers from a Peco wagon kit and the access ladder from a Ratio signal kit. Girders for the crane were made from brick plastic card, which on the face of it sounds rather strange but in fact saved a lot of marking out when cutting the many small parallel strips required for beam construction. After painting, it is necessary to look very closely to discover that the girders are not quite what they seem to be!

Plastic card was again used for the construction of the road bridge, which runs between the station approach and the fiddle yard/loco depot, but for this structure a substantial cardboard frame was used. Capping stones were made from Linka mouldings but were found to be very vulnerable to damage, a problem which has been overcome to a large degree by several applications of matt polyurethane varnish.

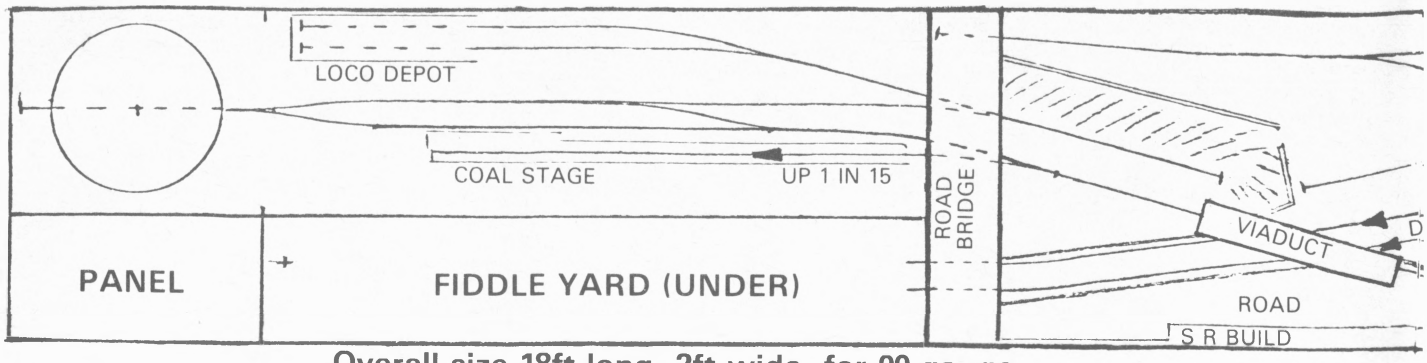
The viaduct, which carries the loco depot line over the main line, was again resurrected from an earlier layout and was made up from a kit of German origin. A car wiper motor is used to drive the turntable via a gearbox attached to a rubber tyred Meccano wheel which drives a large aluminium disc. A point motor fitted with a plunger is used to locate the tracks, the plunger locking into recesses in the aluminium disc, the whole unit revolving on a modified car front suspension hub and stub axle.

Scenery and accessories

Backscenes are from the new Sheriff range which when fitted out with the foreground building some ¼ in. in front of the actual backscene sheet, do give a feeling of depth and make a refreshing change from the scenes so frequently in evidence.

The small amount of scenery on the layout was constructed by glueing blocks of polystyrene to the baseboard and cutting to shape followed by the application of a thin layer of plaster. When thoroughly dry the plaster was coated with some old green gloss paint and while still wet sprinkled with a mixture of Thornton flock powders. Fences are by Ratio, the wire and post type, while the railings are from Smiths, rather expensive but well worth it as they look quite superb.

Cork bark was used to line the cutting through which the loco depot access line passes, while the recessed retaining walls forming the cutting traversed by the main line on its entry to the fiddle yard, were hand built again using brick plasticard. The station lamp, water cranes, water columns and yard cranes were largely constructed from white metal kits by Mikes Models, while other smaller items of detail such as picks, shovels, ballast bins etc are by Coopercraft,



Overall size 18ft long, 2ft wide, for 00 gauge

If you have a long narrow space you can still pack in plenty of trackage and action by going for the multi-level approach used at West Road. For N gauge you can do all this in only 9ft x 1ft! The track to the loco depot crossing the main line makes the whole arrangement look very 'busy' and multi-level tracks like this are quite often seen in real life. From the loco depot to the fiddle yard is a 36ft run for a light engine or 'loco coal' train.

Springside, Merit, Dart Castings, Tiny Signs and Ossett Mouldings.

It is hoped to signal the layout eventually using the Ratio working signal kits, but at present the only unit fitted is a distant at the entry to the fiddle yard and this has been connected up so that trains will not proceed past the signal into the fiddle yard, until it is pulled off by the fiddle yard operator.

The loco stock at present consists of:

68178	Y1	0-4-0	Sentinel	Prototype plastic kit on a scale wheeled motor bogie.
69523	N2	0-6-2	Tank	Detailed Hornby-Dublo body on converted three rail chassis.
80103		2-6-4	Standard Tank	Ex Hornby-Dublo.
64751	J39	0-6-0	Goods	Wills kit on Triang chassis – at present awaiting re-wheeling.
60803	V2	2-6-2	Mixed Traffic	Nu-Cast kit and chassis with Romford wheels.
69001	J72	0-6-0		Mainline.
		0-4-0	Saddle Tank	Scratch-built body on Bristol Models chassis with Romford wheels – shunts sleeper depot.
68899	J50	0-6-0	Tank	Ks bodyline kit on Wrenn chassis.
2849	B17	4-6-0		Hornby – to be repainted in BR livery and detailed.
61817	K3	2-6-0	Mixed Traffic	Wills body on Bristol Models chassis with Romford wheels – nearing completion.

As stated in the introductory paragraphs, certain guide lines were laid down during the planning of West Road, one of these being that wherever possible, hands would remain behind the backscenes! To enable this requirement to be achieved, tests were conducted with various types of magnetically operated couplings, before the Sprat and Winkle system was finally adopted. However, it will be some time before all wagons are fitted out.

Electrics

The layout is operated from two panels, one with a single controller for the loco depot, the other a cabbed unit looking after the main line, station and associated areas. Both panels have been constructed from veneered chipboard salvaged from an old wardrobe while the tops are of aluminium sheet. In each case a track diagram was marked on to the aluminium using ⅛ in wide tape after which the tops were sprayed with two coats of matt black paint. When dry, the tapes were removed leaving the track diagrams in aluminium to contrast well against the black backgrounds. Finally, after cutting holes for section switches, etc, a coat of matt varnish was applied.

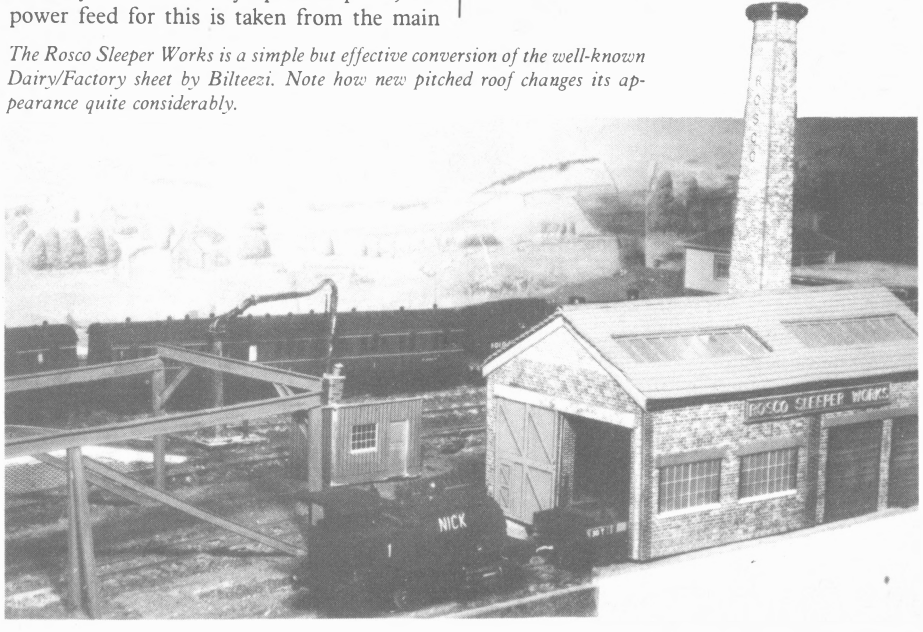
All the turn-outs operated from the main panel are worked by Hammant and Morgan SM3 motors controlled by an electric pencil fed from a capacitor discharge unit. The track controlled by the main panel has been split into eight sections and any one of these may be switched to either of two ECM Compspeed control units. An ECM transformer is used for the input to both controllers and also supplies the 24 volts for CD operation, but a separate 12 volt feed is used to illuminate the switches indicating the state of the platform and sections.

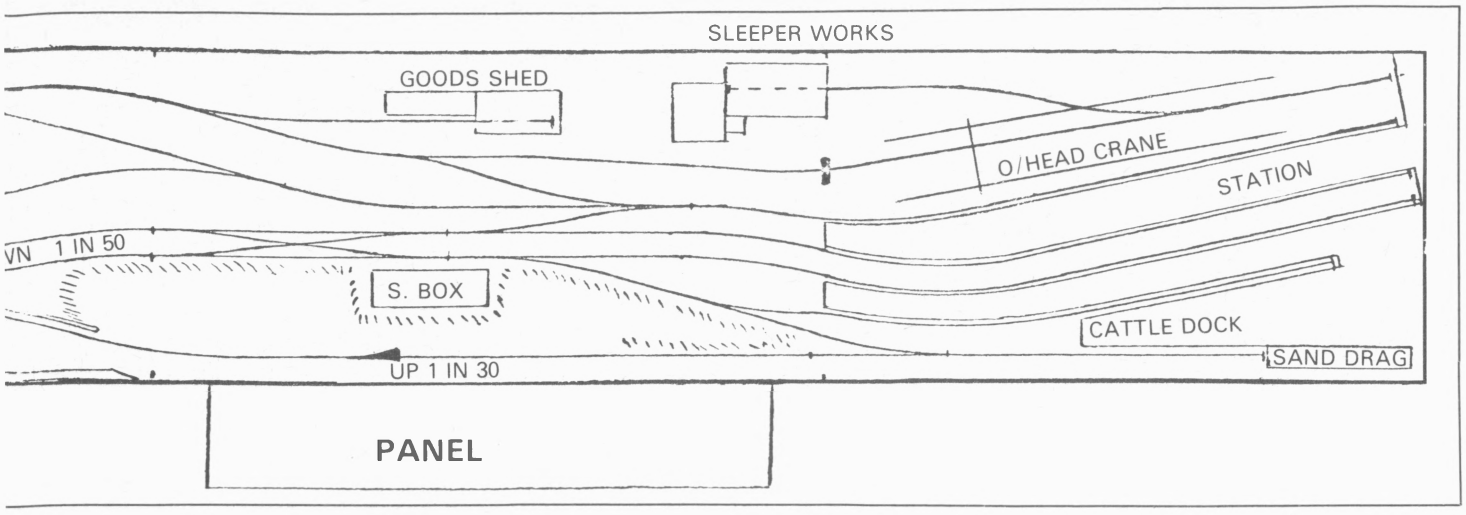
The depot panel also uses an ECM Compspeed unit for controlling the six sections into which the area is split, but as this panel has only one electrically operated point, the power feed for this is taken from the main panel. One section of track may be controlled by any one of the three ECM units, this being the section from the loco spur to a point up the slope towards the loco depot.

This facility enables locos to be placed from the station into the spur by the main panel controllers and subsequently taken over by the loco panel and vice-versa. A three-way switch on the main panel is always returned to its centre position when the spur is not being controlled by the main panel control units, and when in this centre position, a lamp on the loco panel is illuminated to indicate to the depot operator that he has possession of the section. The depot operator also has the facility to switch the point at the foot of the depot incline to 'main line' should the main panel operator forget. Both panels have the facility to 'buzz' each other if required.

As previously stated, only one point on the loco panel is electrically operated, basically because there is insufficient clearance under the depot board above the fiddle yard for point motors, and to overcome this the depot turn-outs are worked by the wire in tube method. One problem resulting from the use of this method with live frog points, which is not experienced when using SM3 motors, is that of frog polarity changeover. The problem was eventually overcome by soldering an insulated length of copper clad paxolin

The Rosco Sleeper Works is a simple but effective conversion of the well-known Dairy/Factory sheet by Bilteezi. Note how new pitched roof changes its appearance quite considerably.



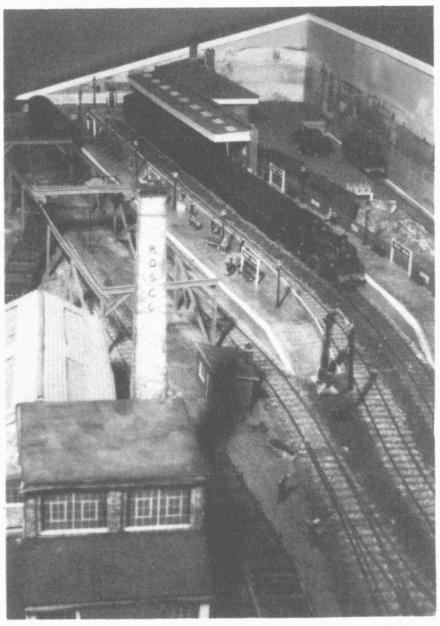


sleeper to the point lever mechanism and connecting with a wire to the frog. Wires were then run from the turn-out stock rails to screws placed in the baseboard on either side of the sleeper. Thus the operation of the point lever causes the sleeper to move from screw to screw changing polarity.

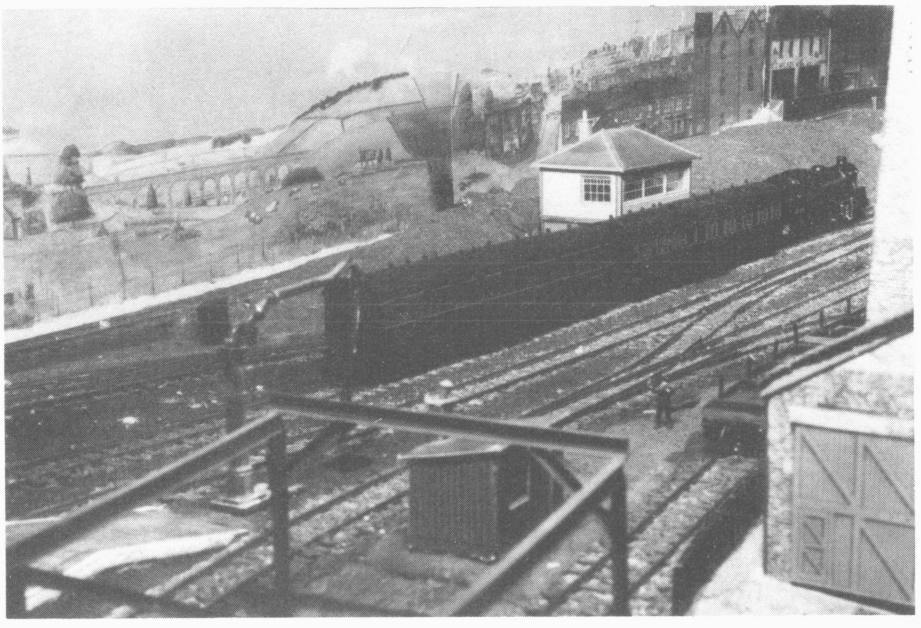
The various wiring requirements, feeds, returns, points, etc, are colour coded for ease of checking in the event of a failure and are fed to multi-pin plugs in the baseboards via tag strips. To avoid board to board wiring getting damaged during transit, dummy sockets are fitted into which the plugs are placed when disconnected so that all wiring remains tucked under the boards instead of trailing out of the end or sides.

Conclusions

I have learned a great deal from the West Road project and now look forward – in about ten years time – to building a prototype branch line based on BR Eastern Region practice during the steam era. Finally, I would like to thank my Kirkton Group colleagues, Andy and Doreen Andrews, John Baggaley and Richard Hayden, for their suggestions and help, and Cyril Redding for taking the photographs.

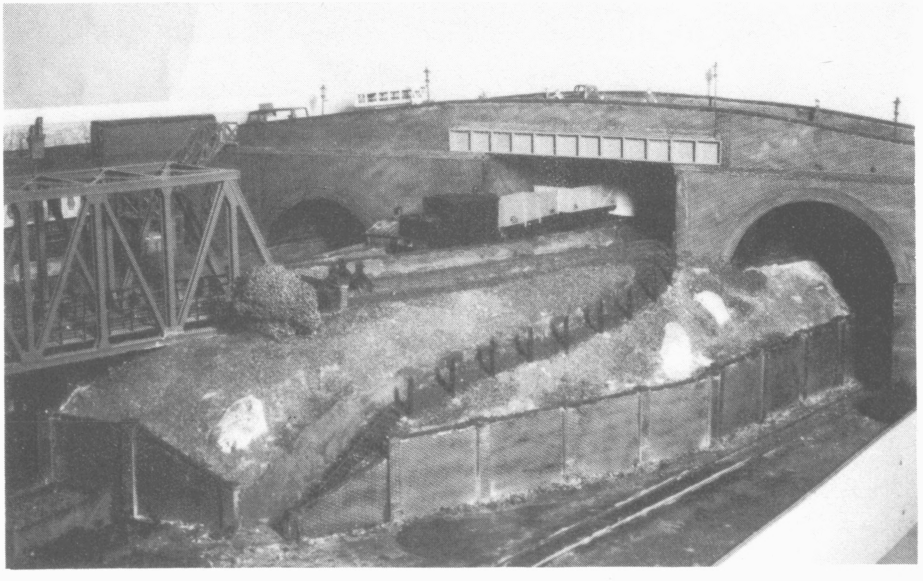


A side view of the layout. The author is at pains to point out that not all of the buildings have been completed yet, nor has the scenery.



The scenery has now changed to one of Northern countryside complete with cows and a viaduct in the distance. The train is on its way back to the station after completing its circuit. This sharp angle shows up the scenic flat background which looks less obviously flat when seen from the front of the layout.

This layout can be seen in operation at the Hemel Hempstead MRC show, September 26, 1981.

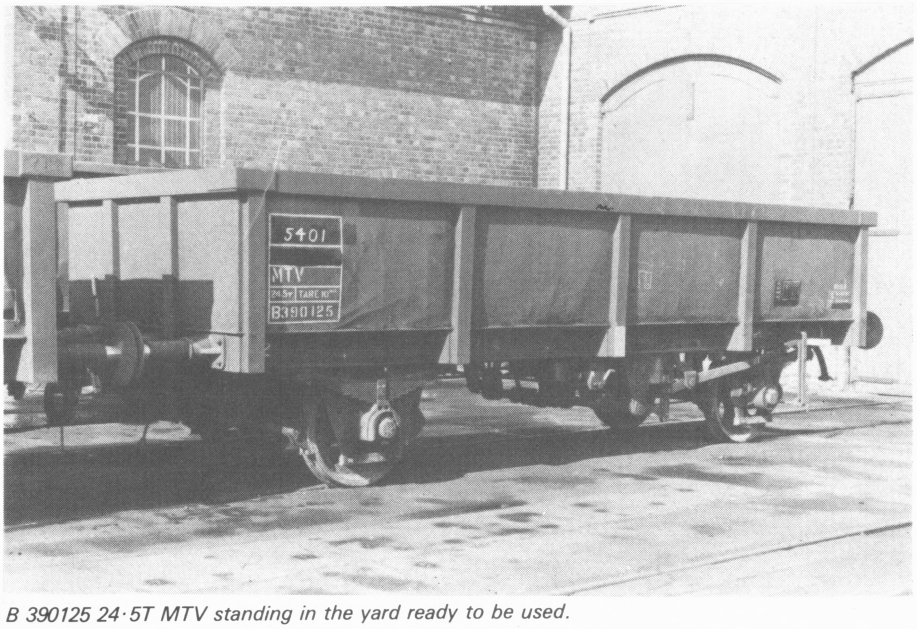


The fencing (seen here in the foreground) is by Ratio and is of the wire and post type. The embankment consists of a mixture of green paint and Thornton flock powder.

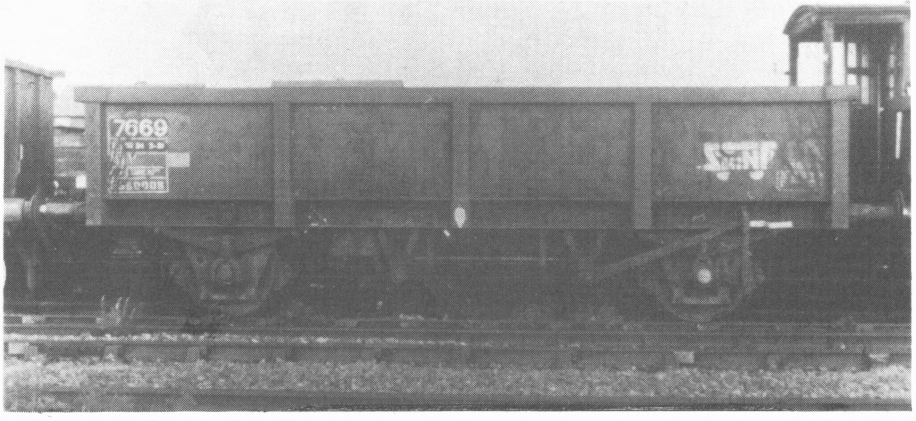
BRITISH RAIL 24·5t MTV SAND WAGON

All photos by author unless otherwise stated.

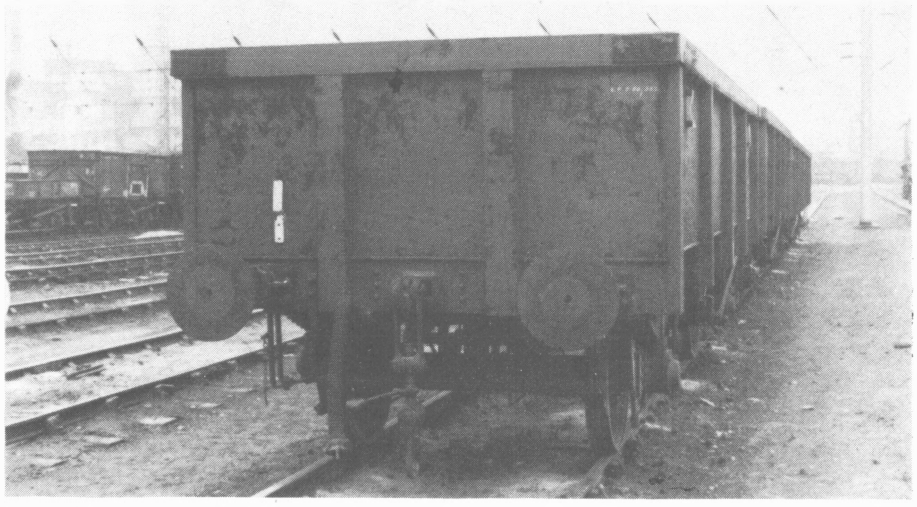
Dave Lea builds a model on an Airfix tanker underframe



B 390125 24·5T MTV standing in the yard ready to be used.



This wagon is number B 390008 but is about to be re-marked as B 390125. Notice the lettering layout and the stone logo.



A rear view of B 390077 24·5T MTV showing overhead warning stickers on the side.

These wagons were constructed on class 'B' tank wagon underframes by the Standard Wagon Co of Heywood, Lancashire and Reddish, Stockport. They were intended to replace the 13t sand tipplers and other vehicles used on sand traffic such as the OHV/OWVs (Highfits) HJOs (Iron Ore Hoppers) and MSO/MSVs (Iron Ore Tippler).

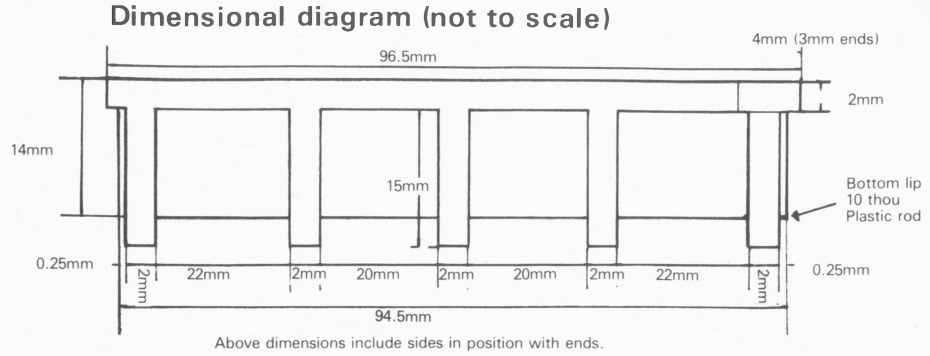
Apart from a slight difference in the springs, which can be ignored, these wagons are easily built in model form utilising the underframe of the Airfix tank wagon kit. The tank from this kit is very useful on its own as a storage tank in an MPD or in an industrial setting, so the cost of this conversion is minimal.

The first stage of the conversion is the removal of all the rivet detail, tank fixing pins and tank retainers from the floor with the aid of a sharp knife and a file. Next, cut a piece of 40 thou plastic card 92·5mm × 28mm and a piece of 20 thou 38mm × 28mm. The 20 thou piece is cemented to the underframe ribs, followed by the 40 thou on top of this to fill in the floor. Place to one side and allow to set hard. Now for the solebars. Remove all detail except the 'V' hangers, spring and axle box details, the pushrod between the 'V' hangars and the small change-over box in the centre. Fit bearings, if required, in the axle boxes and then assemble the underframe as per instructions, checking that everything is square on a flat surface. Put aside to set.

Next we come to the body work. Cut two pieces of 40 thou plastic card, 92·5mm × 14mm for the sides and two pieces, 30mm × 14mm for the ends. These are cemented to the underframe with the sides fitting in-between the ends. Cement the ends into position on top of the buffer beams, filing away any raised sections on the buffer beams first. Then cement the sides in place so that they overlap the floor and are flush with the ends.

The body details are next. One thing I like about these wagons is their simple form of construction, just right for those who are just starting in the world of model railways. Cut into strips 2mm wide, some 40 thou plastic card, (the lengths required are shown in the sketch, together with the positioning). In common with other mineral wagons of the MSO, MSV and certain MCO/MCV types, these wagons have a lip on the bottom edge of their bodies. This can be represented with 10 thou plastic rod cut into lengths to fit between the stanchions and then cemented into place. Corner plates made from 5 thou plastic card, 4mm × 2mm for the sides and 3mm × 2mm for the ends should be fixed to the top rib. A lamp bracket is fitted to each

Dimensional diagram (not to scale)

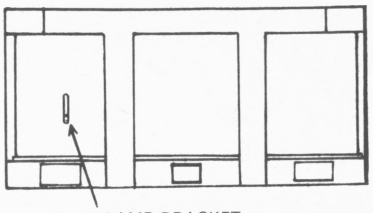


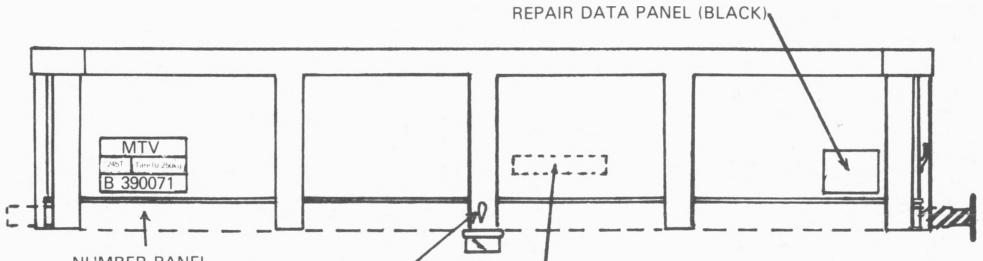
Above dimensions include sides in position with ends.

Width of end = 30mm x 14mm. Width of floor = 92.5mm x 28mm.

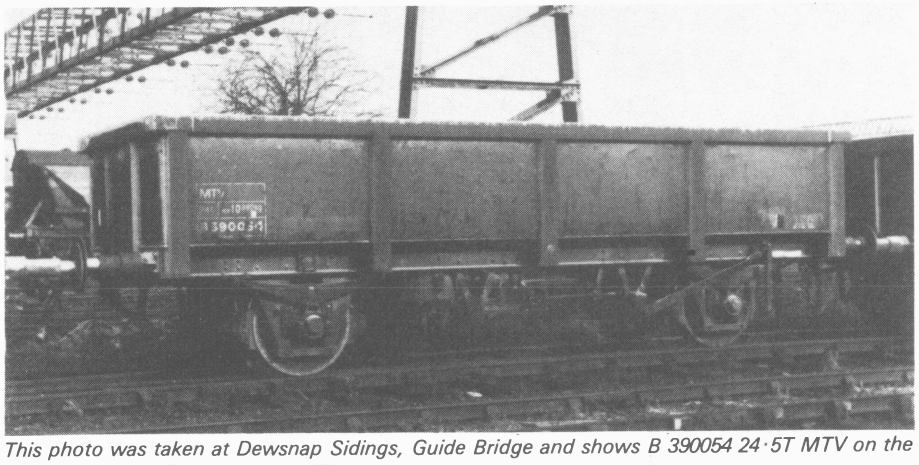
All stanchions and top rib = 2mm,40 thou.
Lamp bracket; 10 thou plastic card, corner plates 5 thou at 2mm x 4mm
stanchions on end; 8.5mm from edge with two stanchions at 2mm each

BR MTV end detail
(not to scale)

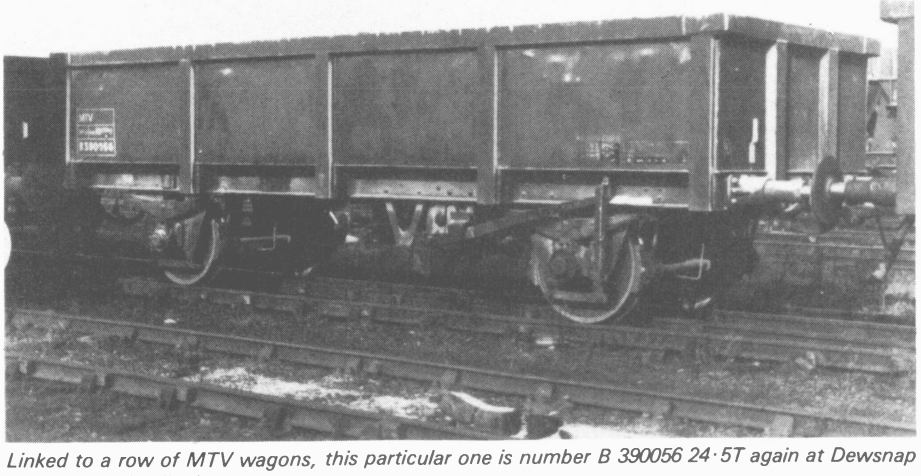




BR MTV side detail (not to scale)



This photo was taken at Dewsnap Sidings, Guide Bridge and shows B 390054 24·5T MTV on the track (Keith Allen).



Linked to a row of MTV wagons, this particular one is number B 390056 24·5T again at Dewsnap Sidings (Keith Allen).

end and these can be made from 10 thou plastic card 0·75mm wide and 3mm long. These should then be shaped as shown in the sketch and be fixed to the left hand panel of each end.

To complete the model add buffers, brake shoes, brake levers, vacuum cylinders and pipes to the underframe. One final alteration needed is to extend the handle of the brake lever with a strip of 10 thou plastic card 5mm long (see photo).

Livery

All these wagons are painted in the standard vacuum fitted colour scheme. Bauxite body, black solebars and running gear. White lettering and numbering is applied direct to the body colour. A black patch appears on the lower right of the right hand panel on each side and a white stroke denoting the manual changeover lever is painted on the bottom of the central stanchions. Some wagons are allocated to a pool and have this painted on almost anywhere.

The letters and numbers can be made up from a mixture of the following: SMS (white border and MTV), Kemco (tonnage, tare and wheelbase), Mopok, Airfix, and Mabex.

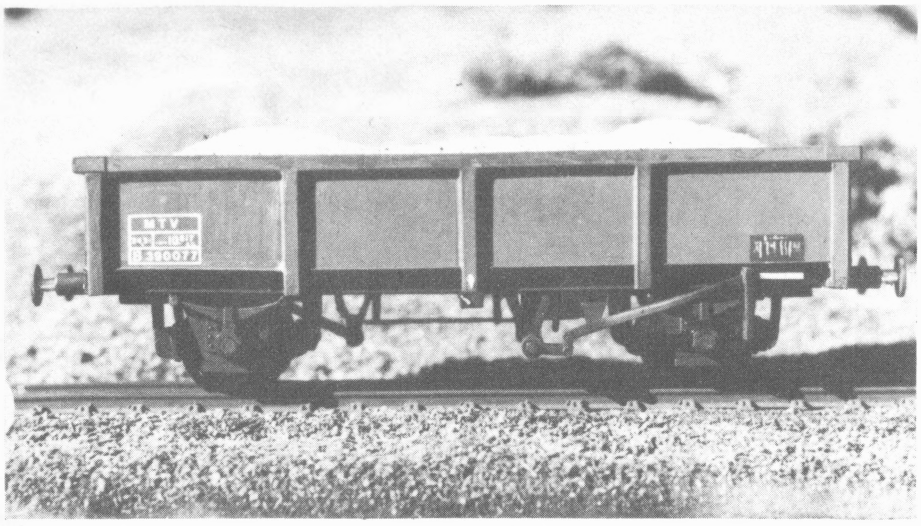
Numbers and details of wagons noted in service include:

B 390054. Tare; 10,880Kg. Wheelbase painted on solebar above 'V' hangers. No other markings.

B 390055. Tare; 10,700Kg. WB 15'-0" painted on above repair data patch. POOL 5019 applied to the second panel in from the left. Overhead warning stickers in the centre of the outer side panels, under the top rib.

B 390067. Tare; 10,758Kg. Overhead stickers as above. Pool number is painted out above wagon number.

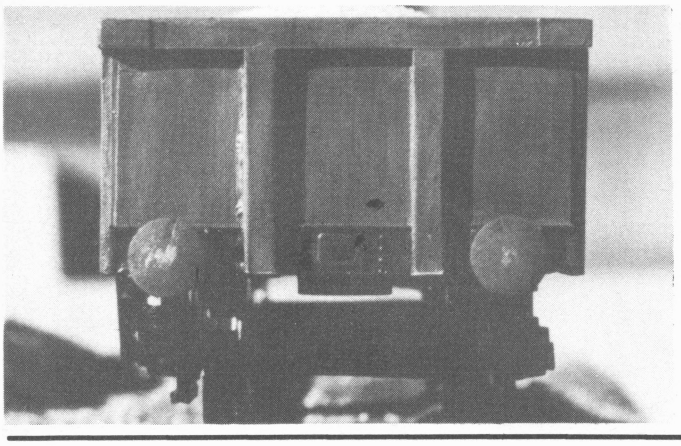
B 390070. Tare; 10,750Kg. No markings other than code, fleet number, etc, and data patch.

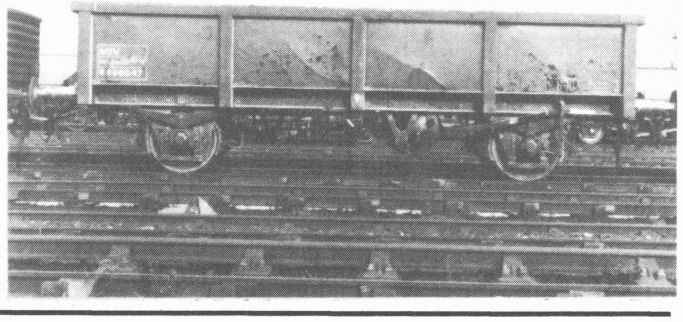


Notice the changeover lever marking, clearly seen here, painted on the bottom of the central stanchions on this wagon B 390247 24·5T.

Below: *A close-up view of the end of Dave Lea's model. It still requires the vacuum pipe and couplings to complete it.*

Below right: *Here is the finished model. One can add ballast weight either by hiding it under a fixed load or else, if it is an empty wagon, by putting it under the underframe chassis.*





B 390039. Tare; 10,950Kg. B 390142. Tare; 10,900Kg. Both of these are re-allocated to pool 5401. The pool number is applied on a black patch as per B 390125.
B 390000. Tare; 10,800Kg. B 390063. Tare; 10,950Kg.
B 390008. Tare; 10,800Kg. B 390140. Tare; 10,850Kg.
All the above are at present in pool 7669 but are to be re-allocated to pool 5401.
B 390000, the prototype wagon also has the stone symbol. The lettering of the above wagons is white applied on the body colour except the maintenance date above the code, this being on a black background.
B 390050 and B 390141 have the pool number (7669) on a black patch.

There you have it, a modern image/present day mineral wagon that can find its way from the country sand pits via a single track, one time passenger branch, to the main lines like the WCML and on to Wigan and the Co-op glass works. To those modellers who dislike kit bashing, the old saying that there is a prototype for everything, has once again been proven. Thanks to Keith Allen for his assistance, and Trevor Mann and BR for letting some of us wagon enthusiasts wander around Warrington (Arpley yard) on a wet August day last year.

Bookshelf

from page 535

development of this African Railway in a little more detail than the article could provide. Original photographs are interspersed throughout the text, making this an attractively designed proposition.

Our Iron Roads Vol I and Vol II *by F.S. Williams. Gresham Books, Unwin Brothers Ltd, The Gresham Press, Old Woking, Surrey. £7.50 each.*

Originally printed in the 1850s, the book was an immediate success because for the first time practically, the book was aimed at the general public rather than the engineering body as a whole. Gresham Books have republished it in two parts, the first volume deals with the history and construction of the railways and the second, concentrates on the operation and administration side of things. Although written in a style that is more formal perhaps than the average modern reader is used to, the author is not a pedant. He provides an interesting and informative insight into the whole railway world at the time. For example, when the first locomotives appeared 'farmers were assured that their hens would not lay nor their cows graze, and that game would fall dead to the ground if they attempted to fly over the breath exhaled by the engines'. Delightfully illustrated with the original engravings, if you can afford them, these books would make a welcome addition to anyone's bookshelves.

Trains to Nowhere *by J.A.B. Hamilton. George Allen and Unwin, 40 Museum Street, London WC1A 1LV. £6.95.*

This book covers most of the major accidents of steam that occured in Britain from 1900 onwards. Rather a gruesome subject one might think and certainly not a book to read at one complete sitting. Amply illustrated throughout with black and white photographs, it is a sad reflection of our technological age, that such accidents ever have to happen. Unavailable for some years now, this latest reprint has been altered slightly and added to by the editor Malcolm Gerard, who has updated it to include a new chapter on the Settle crash. One interesting facet of the book is the way in which it points out how general social conditions of the time, could invariably contribute and sometimes be the prime cause, for these accidents. Tiredness for example, caused by long working hours was a crucial factor in helping the driver make that fatal mistake. If the subject matter interests you, then this is worth asking for.

A Source Book of Miniature and Narrow Gauge Railways *by Geoffrey Kirchenside. Ward Lock, 47 Marylebone Lane, London W1M 6AX. £2.95.*

In the same format as all the other books in this series, it is a simple but adequate reference to narrow gauge and miniature railways. Covering the beginning of the first narrow gauge line, the Penrhyn Railway 1801, it goes on to explain the different useage for the gauge and takes the reader through a quick gallop of narrow gauge lines around the world. Nicely illustrated with good clear photos, this is particularly suited to beginners to the hobby.

A Question of Colour?

Ian Huntley describes Canadian National steam locomotive colours

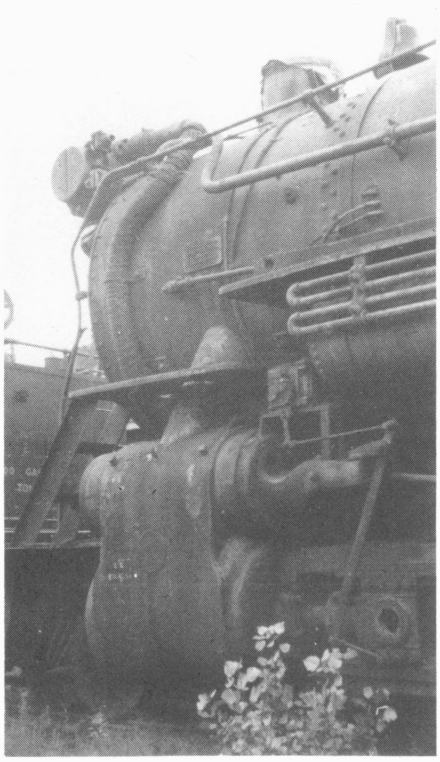
A gleaming Canadian National tender of a Class K-5-a lined up in September 1930 for the works photograph. It is in black with white tyres and the CNR herald in red with gold lettering.

Just before the Second World War started, my relatives in Canada started sending over details of Canadian locomotives. This was followed during late 1944 by further details brought over by one of their friends, joining the RCAF in Britain. That visitor supplied much verbal information about the newly opened CNR station in Montreal, and how US locomotives brought trains into the CPR station in Montreal, as well as both CPR and CNR trains.

Such was my enthusiasm, that work was commenced on a North American style HO gauge layout, circa 1947. However in those days little was available in the way of commercial parts over here, and much of the project involved scratch-building, though later on an exchange of parts with a Montreal modeller was organised.

When it came to colours there were problems. There were black and white pictures by the score and as usually was the case, actual colours references were scant, and even when some colour information was eventually forthcoming, from the relatives, most of it was of the CPR.

By 1950 a file of good references on CPR locos and stock had been made up, but CNR colour details remained at a dismal level, and a few years later the relatives were warning that steam was beginning to be phased out; diesels were coming in; and if actual colour notes were wanted, then the best thing was to organise a visit to Canada as soon as possible.



The front end of Class T-3-a, No 1207 in a rather tatty state. Its last overhaul was probably in 1958. Loco is in the plain black of later years and was pictured in September 1961 on the author's visit to Turcot Yard.

After two false starts, the actual visit did not finally take place until September 1961, at a time when all scheduled steam travel had ceased on both the CPR and CNR.

On a 'better late than never' basis, investigations were made immediately on arrival, to Mr F. Savallee of the Canadian Railroad Historical Society, then employed in the paymasters office in the imposing CPR headquarters at Windsor Station, Montreal. Unfortunately he painted a very black picture of surviving steam, but at the mention of 'any *remains* of CNR steam', he immediately suggested a visit should be arranged to the graveyard of CNR steam, where hundreds of locos and other items of rolling stock had been gathered together, at Turcot Yard west of Montreal.

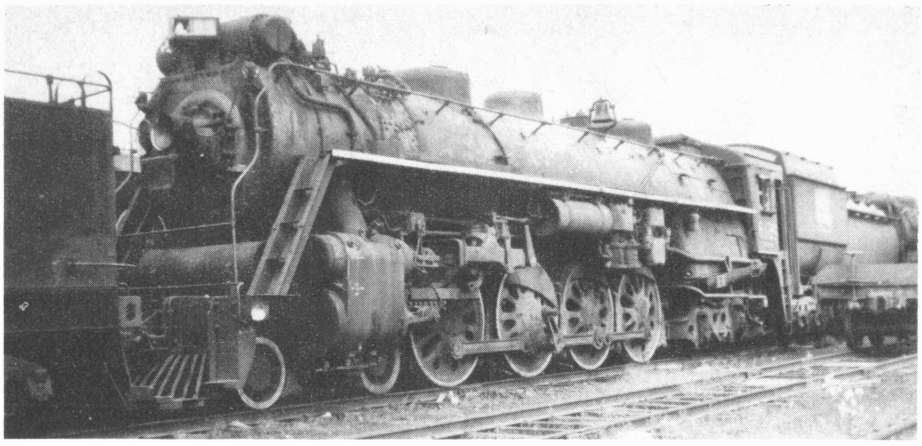
At the fabulous CNR headquarters, and four floors up in the Central Station at Montreal a pass was organised by the regional PRO Mr Norman Lowe. The date set was the 12 September 1961, an historic date for it was the last day of operation of Turcot as a switching yard. The following day a huge new complex even further west was to be officially opened, a meeting which had to be pass-

ed up as a trip to Quebec had already been arranged for that day.

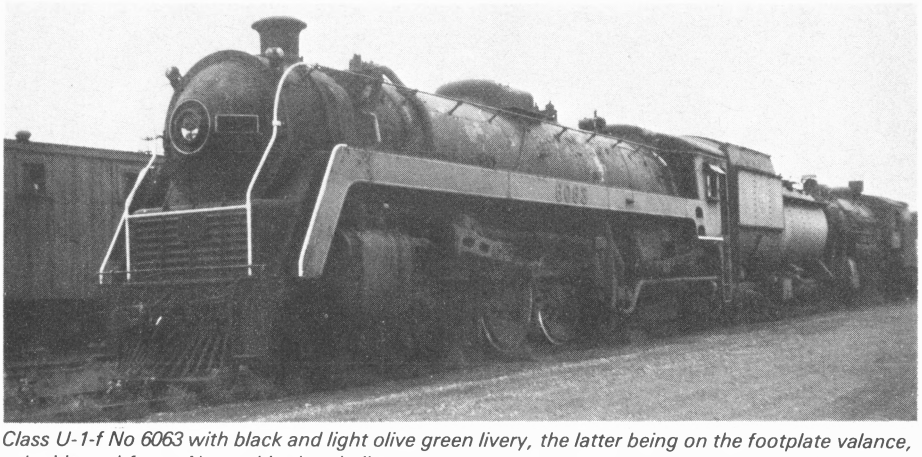
Turcot Yard, Montreal

Arriving at the yard, its size was staggering, seeming to stretch from horizon to horizon. At one end stood an empty round house, the largest in Canada, which boasted the largest turntable in the world. Adjacent to the round house, on seven grass strewn tracks were some 70 CNR locomotives of various classes, from 0-6-0 yard switchers to giant 4-8-4 and 2-10-2 passenger and freight types. They stood in long silent rows coupled in many cases, head to tail in little groups, nearly all having connecting rods and valve gear rodding removed, as were the cast smokebox front number plates. On other nearby tracks were coaches and wagons of various kinds, whilst in the background a GP-7 could be heard throbbing away as it moved rows of aged and damaged freight cars from one track to another. All were waiting for the torch.

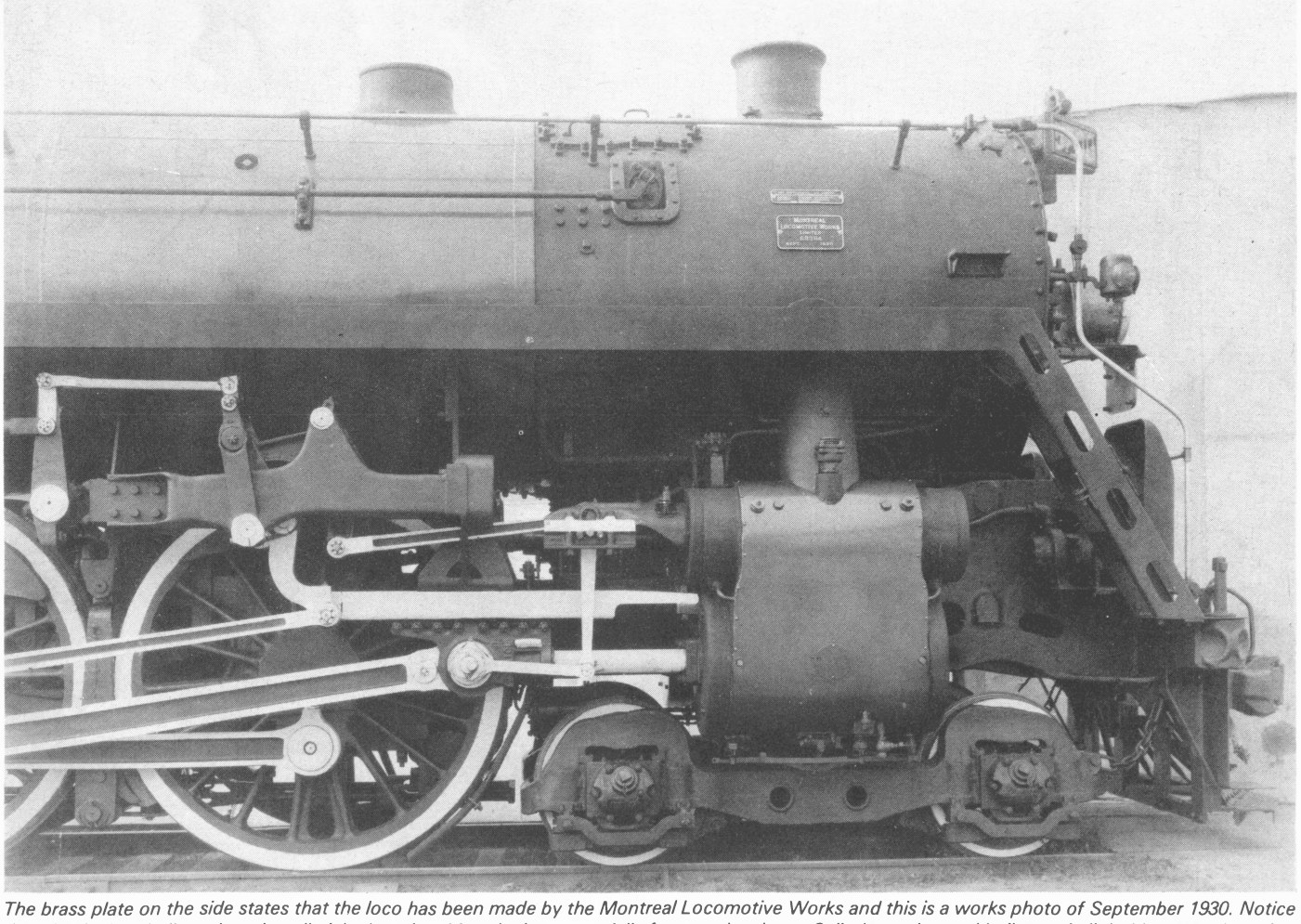
After a walk of nearly half a mile along these forlorn rows, and passing a long inclined track which led up to an enormous multiple-chute coaling stage, we came to the scrap area. There, groups of protectively swathed torchmen, were cutting a brace of Consolidations and the last remains of one Northern. Scrap was sorted into groups using mobile cranes, some into waiting lorries, but the bulk into rows of low-sided gondola cars. Little time was spent in that area needless to say.



The black paintwork had worn away considerably and evidence of the tender once having been green was found on this U-2-b 6189, 4-8-4. Note running plate edge and tyres painted white.



Class U-1-f No 6063 with black and light olive green livery, the latter being on the footplate valance, cab side and front. Note white handrails.



The brass plate on the side states that the loco has been made by the Montreal Locomotive Works and this is a works photo of September 1930. Notice the wheels, handrails and motion all picked out in white, the latter specially for a works photo. Cylinder casing and boiler are in light blue-grey. Loco is a K-5-a.

Paint samples

Brought on the visit, was a camera; sketch pad and pencil; steel tape measure; sharp knife; small steel spatula/scraper; and a small pair of pliers. Some small screwdrivers and a scriber, and a quantity of small envelopes completed the kit.

Selected locomotives, would be photographed first, then suitable samples of paint would be taken and stored in the envelopes, with identity details marked on the outside. If necessary the sizes of lining bands or numerals etc, could be measured and be put down in sketch form.

The vast size of even the smallest loco there meant a climb over all the footplating and ladderways, to see if upper areas were at all different in colour, for as one sage had commented previously, not all CNR locos were *all black*, though most of them would look like it.

First impressions were that *all* locos were a greyish-black, between FS 595a 37038 and 36044, with very matt and discoloured surfaces, (in the Methuen scale that is around the 19(F-G)2 mark,) but closer inspection of certain locomotives revealed otherwise. As some of them were known originally to have had partly green liveries special attention was paid to those areas to find cracks in the paint film. As most paint was in a very poor state, it was possible with the tools to find and lift weak areas of nearly postcard proportions. Some films were as much as 3mm in thickness, and showed layers of different coloured paint within the thickness. Where differences in the basic grey hue were found, the area was gently scraped so that the 'colour' could be appreciated better. If positive differences in hue were found, further samples were taken.

The task occupied the whole day, and later armed with some helpful notes compiled by some local enthusiasts, each batch of colour samples were related numerically to the loco type and number, and the notes. Further notes and references were subsequently gathered during the stay in Canada, so there was quite a task awaiting once a return to the UK had been made.

Interpretations of livery schemes

All samples were divided up, some being kept as untouched (weathered) samples, whilst others were cleaned and re-varnished in an attempt to simulate the original hues. The resulting refurbished hues were then measured for their colour values.

CNR Loco Black

The livery black was not a dead carbon black, but was slightly on the *blue-black* side. When under fresh varnish, a newly painted locomotive would reflect a blue sky in the finish, thus further reducing the dead black effect. For a model the finish needs to be a blue-black around FS 595a 17083 to 15042; Methuen 22(F-G)4 or so. Well worn finishes tended to look a very dark greyish-black, as mentioned above.

CNR Smoke Box Black

Starting off as a gloss blue-black, this colour soon became a dull brownish-black on anything other than an express locomotive.

CNR Light Olive Green

Somewhat of a similar colour to a light Southern Railway olive, cleaned samples from Turcot measured something in the order of 14151: 30(E-F)8.

CNR Light Blue-Grey

Some of the older locos had this colour well below the layers of more recent black, appearing only on the boiler and cylinder casings. Of a pearl grey colour, possibly a little brighter than 16270: 22D3.

CNR Red

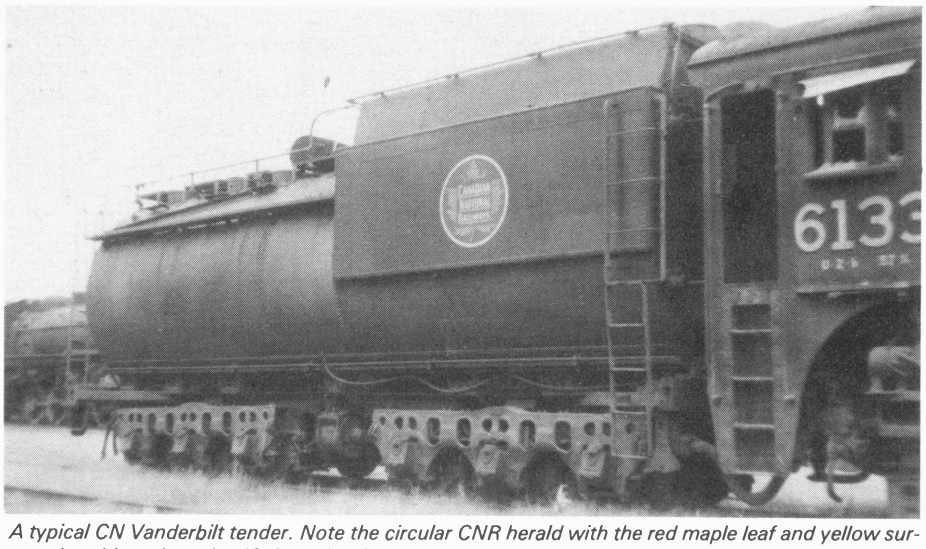
This varied from a light crimson to a light orange-red according to wear, but was generally around 11105: 10B8 when new.

CNR Yellow

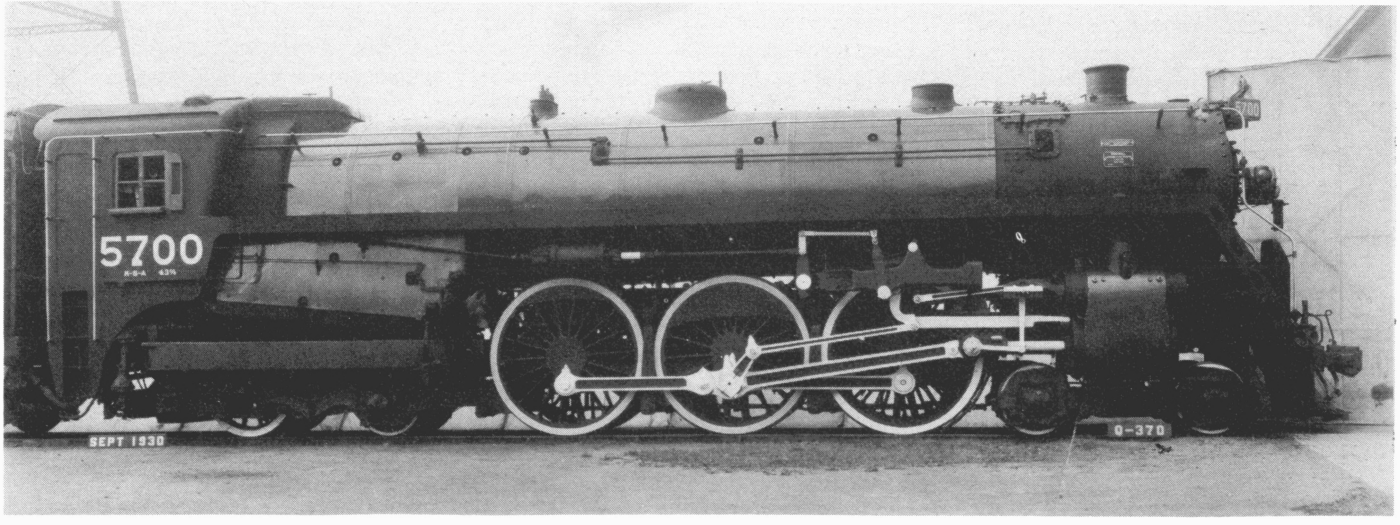
Again this varied from 13538: (3-4)A8 to 33434: 4B5 with wear.

CNR Lining Gold

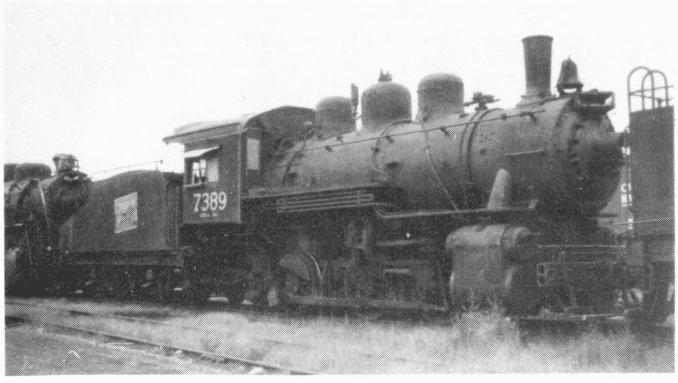
Lining and lettering on first class locos was in a gold lacquer around 17043, or slightly darker. This appeared to be over a yellow base coat. As the gold wore down, the yellow began to show through. On freight and older type locos, yellow was used in place of gold.

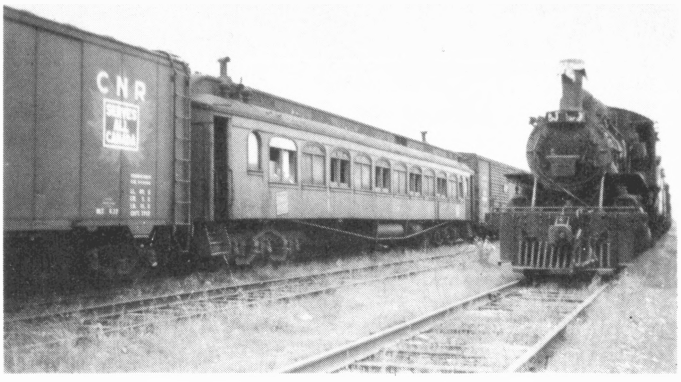


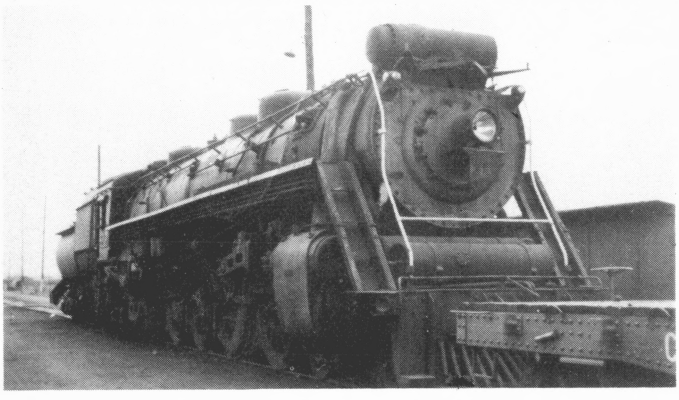
A typical CN Vanderbilt tender. Note the circular CNR herald with the red maple leaf and yellow surround and lettering, the 1950s style of marking. Loco is black, lettering white.



Class K-5-a No 5700. Notice how all the handrails are in white. This superb September 1930 works photo shows light blue-grey finish on boiler, firebox, and cylinder casing, remainder black. Window frames are red, and lettering is white, though it was in gold on some locos at the time. White tyres, handrails and motion.







Above Left: *The tender herald shows the more typical angled position (down to the left), on this 0-6-0, switcher which is all black save for white lettering and red/yellow CNR herald.* **Above**: *A Light 2-6-0 Mogul No 80 in black livery with some of the freight and coach stock in the ranks of the condemned. The all steel box car was built in 1937 and has the 1940s style 'Serves all Canada' slogan in yellow, black and green over the standard box car red.* **Left**: *A once magnificent Class U-2-g, 4-8-4 No 6212. The boiler casing looked as if it had once been light blue-grey. The rest was in black but the tender showed light olive green below. All the wheels and frames were a soiled khaki—once black but very grimy. Standard white handrails and white running plate edge is again evident, with raised white numbers on cab side.*

CNR loco liveries from the mid 1930s

(1) Dealing with express and other fast passenger locos, it looks as if the early finish was for the boiler and cylinder casings (and some other areas below the fire box) to be in light blue-grey, with all remaining areas in loco black, including the frames and wheels. All handrails, the thicknesses of tyres, and edges of footplating were in white. Cab side and tender lettering, in gold. Cast brass number plates and/or builders plates had the background filled in with red. All rodding and external valve gear was polished steel. Cab window frames and lookout surrounds were red finished. CNR logo was applied (in various styles) in red and yellow (or gold), to the forward part of the tender sides. The bell was bright brass, as were some fittings on the headlamp and loco number boxes on the smoke box. Other brass parts included the chime whistle.

The interior of most cabs were lined with wooden slatting. Although on earlier locos this was just plain varnished, locos from the mid 1930s had the slats painted a mid brunswick green around 24108: 27(E-F)8.

Wooden folding seats for the engine crew were replaced by fixed upholstered seats, usually covered with dyed leather or synthetic leathercloth. Originally brown, the colour could be grey or grey-blue, or dark green.

(2) Towards the late 1930s the light blue-grey boiler casing was replaced by the blue-black for freight locos, making them all black. Express locos retained the grey for a while but adopted light olive green cab front and sides and a largely green tender.

(3) After this the passenger locos adopted the blue-black boiler, with light olive green cab and tender, and as valanced footplating became the vogue, the green was extended along the valance. Gold lining for the valance and bunker portion of the tender was adopted, and the practice of having cut out loco numerals for the cab side was introduced. These were of polished brass alloy. All other livery features remained as before. This form of livery came into being during the early 1940s, and lasted about a decade.

(4) From then on more and more locos became an overall blue-black, and gold lining and lettering was replaced by plain yellow. Only a few crack locomotives retained the original livery and by July 1952 the CNR had bought its last steam loco, and shortly after that had 100 diesel locos on order.

Probably the last two CNR types to retain the black/green livery were the 4-8-2 Class U-1-f and the 4-8-4, U-4-a. The last scheduled CNR steam hauled run was made with the former class, loco 6043, on the 25 April 1960. Certainly sister locomotive No 6069 still had the remains of this livery when examined in Turcot during the September 1961 visit.

Canadian Steam Revival

Several steam locomotives have somehow managed to escape the torch in Canada. In fact CN has been responsible for carrying out a complete overhaul and repaint of 6060 of Class U-1-f, so that it was capable of being again in steam. I was pleased to hear that this information was released by none other than Norman Lowe, then CN's Manager of Historical Projects, who stated that 6060 had already had a loaded test run on 11 September 1973.

Back in its full livery 6060 made two successful runs, the first on 15 September 1973 from Montreal to Victoriaville and the second on 27 October 1973, when it ran from Toronto to Fort Erie. Part of that run involved hauling 'dead' 4-8-4 Class U-2-g 6218, which had previously been the CN special runs locomotive until it had to be retired in July 1971. Subsequently having been reconditioned in a limited way, the locomotive was on that day presented to the town of Fort Erie. More recently 6060 has been in the railway news again with more enthusiast special runs. Long may it last.

Exhibitions, Clubs and Societies

Edinburgh and Lothians Miniature Railway Club has a new Hon Secretary. Enquiries should now be addressed to: Mr. D.A.R. Thomson, 26 Viewbank Road, Bonnyrigg, Midlothian, Scotland.

Scalefour Society wish to announce that Robert H. Barr, Montbegon, Hornby, Lancaster, LA2 8JZ, is their new Membership Secretary (New Members and Back Numbers). Subscription renewals, and changes of address, continue to be dealt with by the Trade Officer, C.N.B. Evans, 60a The Chase, Ickenham, Middx.

Chesham Model Railway Club invite enquiries to their new Hon Secretary R. Evans, 'Wynwood' Perks Lane, Prestwood, Great Missenden, Bucks.

Newcastle and District Model Railway Society are holding their annual exhibition in the Guildhall, Quayside, Newcastle-upon-Tyne on November 13, 14, and 15. Open 12.00 – 21.00 (Fri), 10.00 – 21.00 (Sat), 10.00 – 19.00 (Sun). Adults 50p, Children 25p.

Midland Model Rail Fair is to be held at the Harry Mitchell Recreational Centre, Broomfield, Smethwick, Warley, W Midlands on October 3. 11.00 – 21.00 (Sat), and October 4 10.00 – 1800 (Sun). Adults 70p, Children/Senior Citizens 35p, Family £2.00. Over 26 layouts plus other exhibits.

Trainlines

LETTERS TO THE EDITOR.

Support

I feel that I must write to counter the less than charitable remarks of Mr Paul Dann which were printed in the August issue. I think that while Mr Dann may not agree with the ideas of Mrs Thompson, he should acknowledge that she is one of our finest railway modellers and should therefore address his remarks accordingly.

I feel that I am qualified to comment on this matter because I have followed Mrs Thompson's plans and improved a 4F into a 'C' class. I used the 4F cab roof and also the 4F smoke box rather than purchase a body from Messrs Wrenn. Mr Dann could also have done the same if he had given the matter some thought.

It is difficult enough in all conscience, being a Southern Railway modeller in the North of England, without Mr Dann making unnecessary comments about the work of experts who give us the benefit of their experience and ideas.

M. Schofield, Greenfield, Oldham

Zero 1

I have a copy of every issue of Model Trains so far published and I have noticed that so far there has not been much written about the Hornby Zero 1 control system.

I have this system but I have experienced many problems with it. In particular, module fitting to steam locomotives is not as easy as the advertisements imply. No fewer than five faulty modules have had to be returned.

It may be that I have been particularly unlucky but more articles in the model press would be welcome. In fact your magazine is the only publication in which I have seen a single article on Zero 1.

I would value the opinion of other users of this potentially very useful system before disillusionment sets in.

P.M. Ashton, Aylesbury, Bucks.

We'll see what we can do in terms of articles Mr Ashton but, meanwhile, these pages are open to anyone who would like to comment on their own experiences of the Zero 1.
Editor

Bridgend

I read with interest your article about Bridgend Station (July issue). I have been using this station for many years and would like to point out that, since 1970, the Tondu lines are freight-only. The last passenger services ran from Bridgend to Treherbert via Tondu in that year. However Inter-City 125s can be seen there, diverted from the main line at Pyle due to engineering works on the main line. Tondu is an X-junction, with tracks leading to Porthcawl and Bridgend in the South and Maesteg and Abergwynfi in the North. I enclose a photograph of an Inter-City 125 at Tondu taken in 1969 in the hope that it will be of some interest.

R. Allen, Sevenoaks, Kent

Keeping prices low

Can I make two comments on items in the August issue, please. In Richard Gardner's article on 'Improving the Jinty' he states that the TT version was in black. The original Triang version certainly was, but after a year or two it was issued 'lined out', and I have two examples on my layout. Towards the end of commercial TT, Triang reverted to plain black.

Secondly, with regard to Nev Fadrie's letter on collectors items. He asks how many 3mm modellers frantically search jumble sales and flea markets for Triang TT items. I would say very few. Certainly members of the 3mm Society do not need to. The Society has an excellent 'secondhand' service, which has done a lot in the past to keep prices sensible, and anyone wanting to start in the scale would be well advised to join the society just to get a few ready-to-run items to start with. I have personally had the pleasure of telling certain individuals in shops and on stands at exhibitions that the prices they are asking for such items are double and three times the Society's price, and leaving the goods unsold. I know that other society members do the same. There is no excuse for asking fancy prices for the bulk of the Triang TT items.

G. Hollis, Dore, Sheffield

Another Use

I would like to say a word of commendation for *Model Trains*, and the way it has developed. I must admit I had reservations at first, but the magazine now has its own unique offering to add to the (hitherto) Big Three. It is a comment on the general health of the hobby that it is able to support four quality magazines, and in the middle of a recession at that. Welcome!

Further to Michael Andress' article on uses for old van bodies, another possibility is to place the battered wagon or van at the side of the track, on its side or even upside down, possibly with the wheels removed and alongside, and partially covered with a tarpaulin. This is to represent the survivor or possible cause of a derailment. Alternatively the damaged wagon could form an authentic load for a Flatrol type wagon, as illustrated in Dave Larkin's *BR Standard Freight Wagons* (page 57). I saw an example of the former at Norton Bridge a year or so ago. This was some weeks after the derailment.

John Allison, Warley, W. Midlands

Extra details

It was with great interest that I read the articles on the 'Footballer' in the August issue.

I am engaged on repainting and doing the conversion of Hornby models and a McGowan kit and would like to make a few points.

(1) The Hornby model is not as excellent as it could be, being over scale in length, both the loco and the tender. The boiler in front of the dome is about 4mm too long and the tender is over length by the same amount, presumably to accomodate a standard motor chassis.

(2) The wire handrail on the tender is set too far back and needs moving forward so as to be outside the lining. Also the loco handrail is shaped in the style of GWR where it crosses the smoke box front and not as it should be (compare the pictures on p418-9 with the model).

I am busy converting a Hornby model to a B2 but in order to use the Hornby motor, I find that I am restricted to three locomotives. These are numbers 61671, 61615, and 61632. Conversion mainly involves removing both the vacuum cylinders from the tender, rebuilding the footplate and cabsides and remounting the brake shoes to 'operate' on the front of the wheels instead of the back. 61615 and 61632 had modified non-standard tenders from the 'P1' 2-8-2s which had been scrapped. These were larger than standard being 4700 gallon water capacity.

R. Gardner, Chelmsford, Essex

The train is moving down the Bridgend line after having come from Porthcawl and reversing just beyond Tondu station.

Shopwindow
NEW KITS AND MODELS.

New items of interest to railway modellers are reviewed by the editorial staff or contributors and opinions expressed are theirs, not necessarily the views of the publishers. While every effort is made to give latest catalogue or recommended retail prices, prices quoted should be taken as a guide only due to variations in discounts, exchange rates, taxes, and postal rates. Most items are generally on sale in usual outlets, but addresses of suppliers are given where there is only limited availability.

Victors: Rail bridges for OO/HO, UK 70p each.

Bargains still continue to appear even when prices generally seem to spiral ever upwards. Victors, 166 Pentonville Road, London, N1, are importing a range of three ready assembled plastic bridges at prices cheaper than any kit could match.

Each bridge is to the length of a standard track section, a straight of Code 100 sectional track being integral with the decking of the bridge. The three types available are a plate girder, box girder, and underslung girder bridge, sharply moulded in black plastic. All join together, so double track or multi-span bridges are possible by using the appropriate number of bridges. These take any sweat out of bridge building and at the asking price are well worth a look. Postage is extra on mail order.

Victors: Steel track for OO/HO, prices in text

Uniform with the track used on the bridges, Victors are offering a new line of steel, Code 100 OO/HO gauge track at very competitive prices – possibly the lowest right now. The basic geometry is the usual 18 inch radius curve, 12 to a circle, and the track joins to all other Code 100 currently available. Straight lengths are also included. Prices are £1.50 for a circle, 9in straights £1.50 for 12. Short curves £1 for 12. Terminal track (curved) 45p, and rerailer 60p.

Of particular interest are the left and right turn-outs. These are of dead frog non-isolating type (similar to the Roco style) with a commendably small plastic frog. The switch mechanism is unobtrusive and is designed to take a slim plug-in motor (available later) for remote operation. The great feature is realistic dummy point rodding moulded with the sleeper base and adding a most realistic touch which we don't remember seeing before on any other make of ready assembled turn-out. Price is 95p each. Yard lengths of flex-track cost £8.50 for 24 yards; postage is 75p per order.

Rivarossi: 'Thunderbox' coach, 1:45 scale/0 gauge, UK £7.50

Not new, but newly received by us, is a neatly moulded coach of the 'Thunderbox' type, a steel bodied four-wheeler in dark green finish. No DB logo is featured presumably so that modellers can use it as DB or pre-war DR and mark it accordingly. We cannot trace the actual type that it is supposed to depict, but there were various 'Thunderbox' bodies to fit differing chassis lengths. This one is 2nd class with a toilet compartment. A 1st class version is in the catalogue but it appears to be the same moulding with different lettering. The models are also available in DB red. Moulding, finish and marking is of the highest quality and there is full underframe detail. Metal wheels of 'universal coarse' standard run on pin-point axles. The Simplex-type auto-coupler is fitted, but 3-link couplings could be added easily enough. There is full interior detail and bright window surrounds. At 26cms long, two of these coaches are shorter than a bogie coach and would make an ideal compact branch line train for a small 0 gauge layout. Though no longer in revenue service, some of these old four-wheelers are still seen in work trains even today in the latest DB blue finish. Our sample came from Junior Distributors Ltd, who

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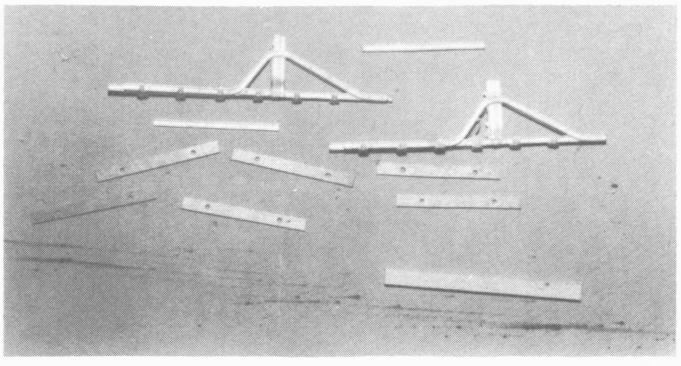
Perfect Miniatures: GWR buffer stops, 1.76 scale, UK £1.80 plus VAT, plus 25p p&p for each item

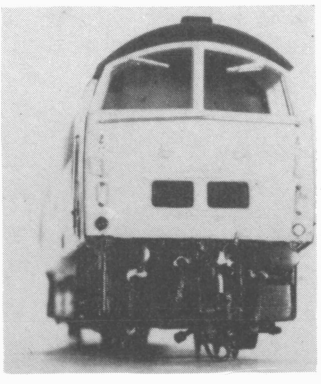
Chuffs, 86 Friars Street, Sudbury, Suffolk, have now ventured in 4mm scale under the series name Perfect Miniatures. The first model is a delightful replica of the standard GWR rail-built buffer stop which is very cleanly cast (though there was very slight flash on our sample) complete with chairs and bolts integral with the rail. Wood sleepers are supplied, plus a wood beam for the buffer bar. Assembly is simple but the model is decidedly fine scale. Thus, while the track section matches EM or P4 or fine scale 00 standards, it is finer than the Code 100 heavy rail section usual in sectional or flex-track. It would need a shim of card of thin cork beneath the sleepers to make it match up with Code 100 track. Some buffer stops of this type had an oil lamp on the beam, but this is not provided with the kit. Postage is extra.

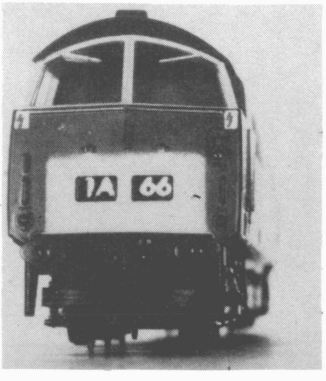


Adpaks: Loco accessories, 1:76 scale, prices in text

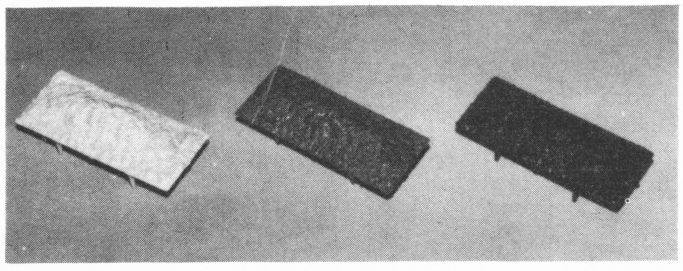
Here is a new name in the accessory field with some useful new items. Many articles in this magazine have dealt with the extra detailing of ready-to-run locomotive models. Adpaks now make it even easier by providing some kits with all the necessary parts for this sort of project. We have a 'Western' diesel detail set (£1.50 UK) with cast and wire parts for the Lima model – brake and heat pipes, handrail wire, coupling adaptors, and jewelled lights to replace the moulded lamps. A full front valence is also provided. The instruction sheet is highly detailed and even includes a colour guide for the various hose sockets. It also shows parts to be cut away from the Lima moulding. This is a most valuable set and the parts are nicely cast. Similar sets are available for the Lima Deltic (£1.75), Jouef Class 40 (£1.75) Airfix Class 31 (£1.45), Warship (£1.45), Mainline Peak (£1.45) and Hornby Hymek (£1.45). With the exception of the last two we have published articles over the months covering all this work without the benefit of the Adpak parts. With the Adpaks releases the work becomes much easier, but our various articles (eg, Class 31, September 1980 issue) will also be useful, even if you do use the Adpak kit instead of making up detail fittings for yourself. The pictures show the Lima 'Western' before and after fitting of Adpak details.

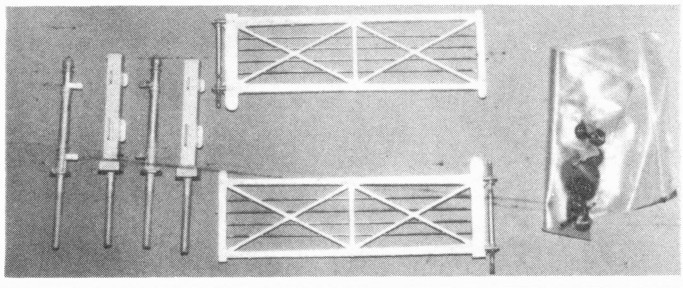
Adpaks also produce other items including a very useful steam loco tool set (50p) of fire irons, bucket, broom, maul, tea urn, etc, and etched brass cab handwheels and gauges for addition to model steam loco cabs (60p). SAE to Adpaks, 28 Cottesbrook Close, Ernsford Grange, Coventry, CU3 2FU, will bring a full list. Postage is extra on all the items. For N gauge there is a set of six tiny loco lamps, with jewelled reflectors (70p), two with red 'glasses', available coloured red, white, or black.





Panther: Wagon loads, 1:76, scale, UK 35p
Panther Plastics, Edison House, Glenrothes, Fife, KY7 5QR, have come along with a useful item – wagon loads to fit the various open wagons produced by Airfix and Mainline. These are plastic moulded in black (coal), white (limestone) and brown (ore) and sold in sets of three to a pack. They can be used as supplied, but could be further enhanced either by painting – to break up the uniform 'new' colour – or they could be covered with suitable textured material. Each piece fits easily and comes out with a slight pressure at one end. As the ends and edges can be trimmed slightly, these loads could undoubtedly be used in other makes of wagon with a little measuring and chopping. If you have no local stockist Panther can supply direct, post extra. Use of loads like this can help the operating side of your layout, for loaded coal wagons can be shunted into a siding (for example) and the loads can be removed to signify transhipment, so that empty wagons can then be returned.





Sevenscal: Level crossing gates, 1:43 scale, UK £12/16
Chuffs Model Train Peddlers Ltd, 86 Friars Street, Sudbury, Suffolk, have produced another item for 0 gauge, this time in the shape of exquisitely cast parts for various types of level crossing. The basic set (illustrated) is for a single track crossing, with posts, gates, fixing screws, dummy lamps and the red 'targets' for the centre of the gates. Setting-up dimensions are given in diagram form with the instruction sheet. This set is at the lower price. At the higher price is the double track set with four posts and gates, otherwise the same castings. The quality is exceptional, with cast detail including actual tiny bolt heads, etc. There is clearly a great deal of work in the moulding process to incorporate the bars and hinges within the casting. Single gates and posts are available to order at £6.50, useful for private sidings, etc. VAT must be added to all prices. Postage per order is £1.15.

EPC: Colour light signals, 00, HO, N scales, prices in text
Evans Products Co, 968 Warwick Road, Acocks Green, Birmingham, B27 6QG, produce a large range of working colour light signals for both 00/HO and N scales. They seem to cater for every likely requirement and the extent of the range and the variations available is most impressive. All models are from cast metal and are supplied fully painted ready for installation. They are all based on British originals though could be used with overseas model railways without looking out of place. Considering they work and all feature wiring, they manage to achieve a good scale appearance. All that is required is a hole in the baseboard so that the leads can be joined to the lighting circuit, etc. Bases mostly have small holes for securing pins or screws. The quality of workmanship is high, though on one or two N scale items the little ladders came adrift with handling and needed re-cementing. Each model comes in a clear box with a wiring diagram included. Our samples included an overhead gantry for two tracks with two 3-aspect signals (UK £8.28). Options on this are two 2-aspect or two 4-aspect signals (see first picture). The second picture shows typical single signals. The 4-aspect offset post version costs UK £6.23, the 2-aspect post is £2.85 and 2-aspect offset post is £3.56. An early BR standard junction signal costs £4.45. In N scale the third picture shows a ground repeater (£6.41), 3-aspect post

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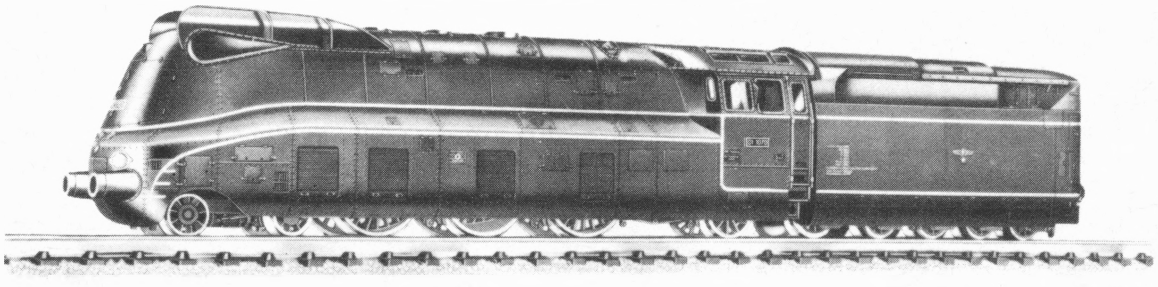

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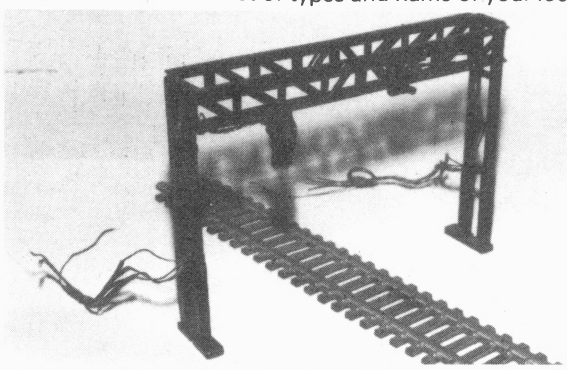
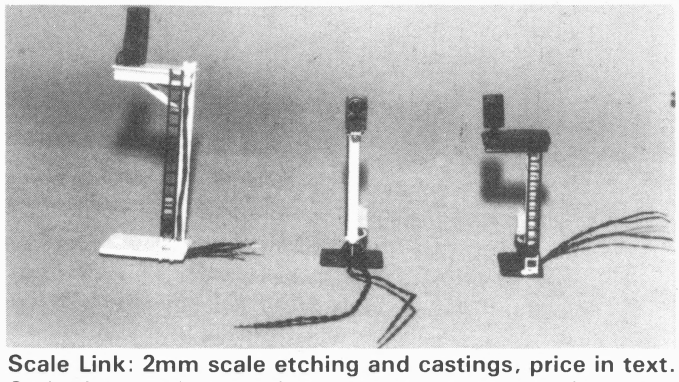
(£5.34) and offset 2-aspect post (£5.25). There are about 36 variations, plus many spares and accessories (such as bulbs). Send an SAE to EPC for a full list of types and name of your local stockist.

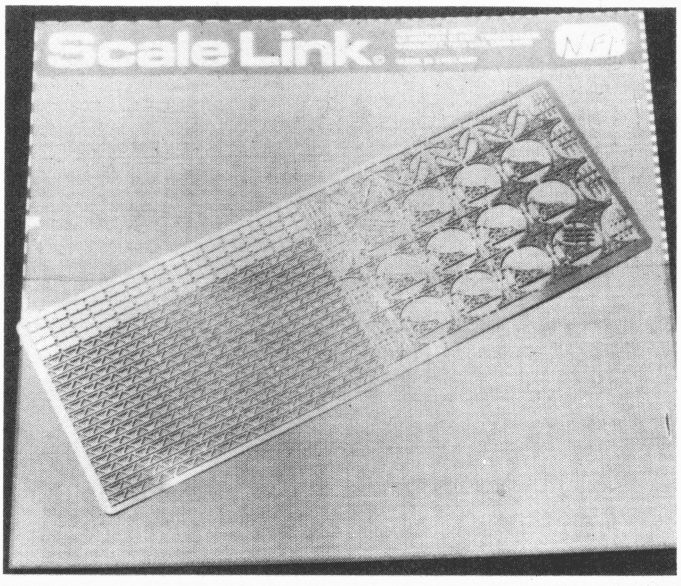




Scale Link: 2mm scale etching and castings, price in text. Scale Link have been producing high quality etchings for the last couple of years in 4mm scale. Now they have extended their scope into the 2mm market. All frets are from 8 thou etched copper, and measure 204mm x 72mm. The etchings are coated in 'etch-resist' which is best left on unless you intend to solder them together. The resist will help key most adhesives such as Uhu, Gloy, 5 Minute Epoxy, Super glue etc. When soldering, the resist can be removed either by scratching the surface away or with paint stripper. Primer and paints do not affect the resist. Even the packing can be used. It is printed as brickwork in 2mm scale! The edges of the sheet have 2 + 4mm scales printed around them to make cutting easier.

NF1: This fret contains; cast iron brackets, spearpoints 18in trusses and assembly brackets. NF2: This fret contains; roof trusses, ventilators and heavier trussing. NF3: contains; valancing and roof glazing frames. All the above frets retail at £2.95 each.

To compliment the range of 2mm etchings, Scale Link have also produced some 2mm castings. SLC 25 contains 30 mixed chimney pots and SLC 26 contains 18, 8ft columns. Castings are priced at £1.25 per set. All items are available from good model shops, but in case of difficulty, items can be obtained direct from the manufacturers: Scale Link Co, 42 Appleby Close, Twickenham, Middlesex, TW2 5NA. Postage and packing 50p, on orders up to £12; orders over £12 are post free.



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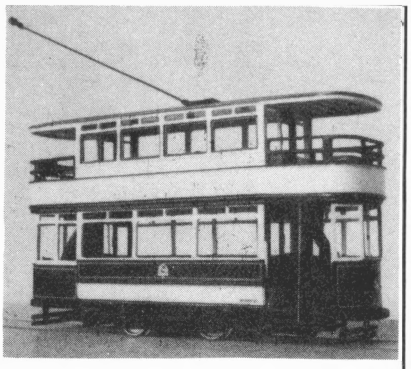

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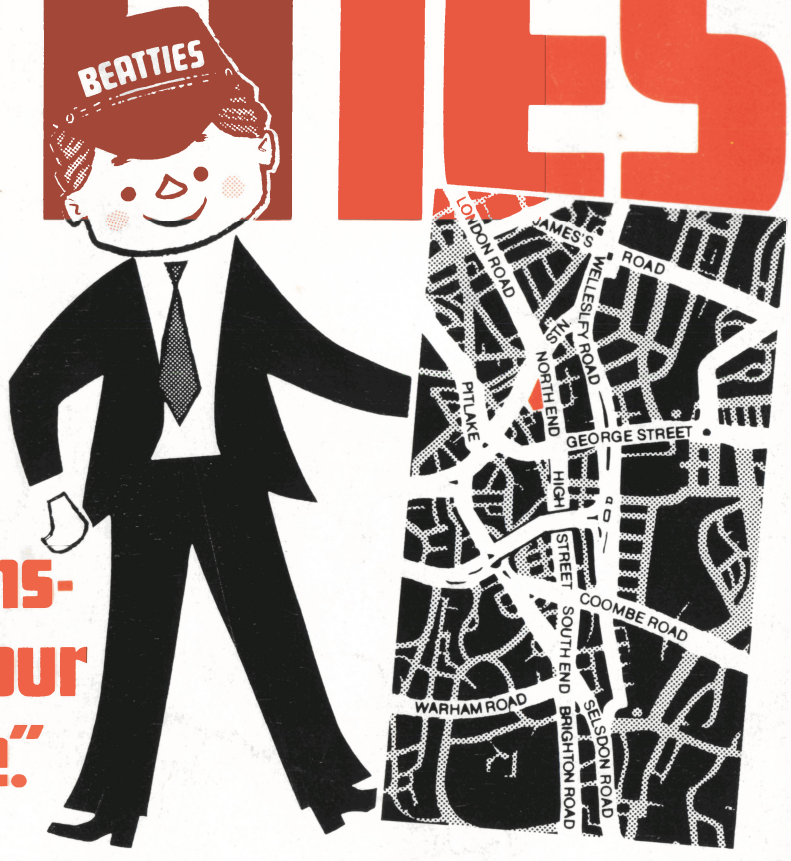

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